The Journal of the American Medical Association

Published Under the Auspices of the Board of Trustees

VOL. 122, No. 8 — CHICAGO, ILLINOIS — JUNE 19, 1943

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THE ST. LOUIS AND JAPANESE B TYPES OF EPIDEMIC ENCEPHALITIS

DEVELOPMENT OF NONINFECTIVE VACCINES: REPORT OF BASIC DATA

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The St. Louis and Japanese B types of epidemic encephalitis occur in the late summer and early autumn and are caused by two immunologically distinct viruses. The most recent data favor the concept that these viruses exist in an animal reservoir from which they are transmitted to human beings by mosquitoes.[1] Thus far the St. Louis virus has been isolated only in the United States and the Japanese B virus in Japan, the Maritime District of the Far East of the Union of Socialist Soviet Republics[2] and in 1940 also in Peiping, China.[3] An incompletely studied virus isolated during epidemics in Australia in 1917 and 1925 (Australian X disease[4]) had many properties in common with the Japanese B and louping ill viruses.

At the suggestion of the Board for the Investigation and Control of Influenza and other Epidemic Diseases in the Army, a study was undertaken to determine whether or not it may be possible to develop suitable and safe vaccines for the protection of human beings against these types of epidemic encephalitis. It has been known since 1933 and 1935, when these viruses were first recognized and studied, that animals surviving a peripheral inoculation of a sufficiently large dose of infective virus were immune to reinoculation with doses of virus sufficient to kill control animals. There were no reports, however, of the successful production of vaccines in which the virus had been completely inactivated, although attempts to find such preparations have apparently been made.[5] The objectives of the present investigation were to find vaccines, consisting of virus rendered noninfective by physical or chemical means, which would be capable of immunizing animals against infection by a peripheral route, comparable to that obtaining in nature, within a relatively short time and by means of a relatively small dose. Since, if such vaccines could be found, their use for human beings would be considered only during epidemics, and since the total duration of epidemics caused by either of these viruses may not exceed a period of six to eight weeks, it was important (*a*) that these vaccines be capable of conferring protection rapidly, i. e. at least within a week, and (*b*) that they should retain the desired potency after storage for long periods of time. It is believed that these objectives have been achieved and it is our purpose in this communication to describe briefly the factors which made possible the preparation and suitable assay of these vaccines. The many tests and experiments which had to be carried out in order to discover these factors will be described in detail elsewhere.

GENERAL PRINCIPLES

The approach to the problem of developing vaccines against St. Louis and Japanese B encephalitis was guided by the realization that it was necessary first of all to find:

1. The richest source of virus and immunizing antigen.
2. A method of chemical or physical inactivation of the virus with the least loss in antigenicity.
3. A method of quantitative assay of the vaccines based on resistance to infection by a peripheral route which may be considered comparable to that obtaining in nature.

RICHEST SOURCE OF VIRUS AND IMMUNIZING ANTIGEN

(*a*) *Selection of Host.*—Quantitative studies on the various fluids and tissues of chick embryos inoculated into either the allantoic or the yolk sac, showed that

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This work was carried out at the direction and with the partial financial support of the Commission on Neurotropic Virus Diseases of the Board for the Investigation and Control of Influenza and Other Epidemic Diseases in the Army. It was also aided by a grant from the National Foundation for Infantile Paralysis, Inc.

Dr. Carl E. Duffy collaborated in all the work on the Japanese encephalitis vaccine, Dr. Joel Warren in the early orienting experiments on the St. Louis encephalitis vaccine and Drs. Robert Ward and John L. Peck in some of the later work on the St. Louis vaccine. Dr. Peck's collaboration was made possible by a virus fellowship from the National Research Council.

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(Footnotes continued in next column)

not one of them was a good source of either virus or immunizing antigen for these two viruses. A study of the titers developed in several stocks of available mice indicated no significant differences. In general the highest titers were most regularly obtained in the brains of intracerebrally inoculated 2 to 3 week old mice. As regards the utilization of susceptible hosts of larger size, it was found that while the Syrian hamsters yielded titers of virus that were almost, but not quite, as high as those achieved in mice, their brains were only about twice as large as those of mice. The horse was not investigated as a source of St. Louis encephalitis virus because of the very low titer of virus developed in its brain.[6] Newborn lambs and young sheep were studied as a possible source of the Japanese B virus, but their brains were found to contain too small an amount of virus.

(*b*) *Selection of Strain of Virus.*—The strain of virus used was found to be an important factor. Of the three strains of St. Louis encephalitis virus tested, the No. 3 isolated in 1933 (obtained from Dr. L. T. Webster), the "Hubbard" isolated in 1937 (obtained from Dr. Margaret Smith) and the "Taylor" isolated in 1937 (obtained from Dr. Carl G. Harford), the Webster No. 3 yielded four to six times as much virus as the other two strains in simultaneous tests on mice of the same stock and age. In tests for immunogenic potency of the inactivated viruses the "Taylor" strain was definitely inferior to the other two. Of the two strains of Japanese B encephalitis virus tested, the No. 12 obtained from Dr. L. T. Webster and the "Nakayama" obtained from Dr. Margaret Smith, the "Nakayama" strain regularly yielded at least ten times as much virus as the Webster No. 12, and on complete inactivation of the virus the "Nakayama" strain yielded an adequate immunogenic vaccine while the other strain did not. Thus the Webster No. 3 strain of St. Louis encephalitis virus and the "Nakayama" strain of Japanese B encephalitis virus were chosen for the vaccines.

(*c*) *Effect of Centrifugation.*—The effect of centrifuging the mouse brain suspensions on the virus content and antigenicity of the supernatant liquids was studied extensively with both viruses. In the case of the Japanese B virus repeated tests failed to show any difference in virus titer between the uncentrifuged suspension and the clear supernatant liquid obtained after spinning this suspension on a Swedish angle centrifuge at 3,000 revolutions per minute for thirty minutes. The uncentrifuged suspension, nevertheless, yielded a more potent vaccine. With the Webster No. 3 strain of St. Louis virus the uncentrifuged suspensions regularly yielded higher titers (three to ten times higher) than even the opalescent supernatant liquids obtained after horizontal centrifugation at about 2,000 revolutions per minute for ten minutes. Here again the results of a number of tests indicated that the uncentrifuged suspensions yielded the more potent vaccines. The intracerebral LD_{50} titers of four St. Louis encephalitis uncentrifuged vaccines were $10^{-8.2}$, $10^{-8.6}$, $10^{-8.3}$ and $10^{-8.6}$. The titers of the Japanese B vaccines were usually of the same order of magnitude.

CHOICE OF METHOD OF VIRUS INACTIVATION

Solution of formaldehyde, ultraviolet radiation, ozone and "soft" x-rays were studied for their capacity to inactivate these viruses with the least loss of antigenicity. The effect of different concentrations of solution of formaldehyde acting at different temperatures was investigated. It was found (*a*) that both too little and too much could yield poorer antigens and (*b*) that, while inactivation entirely in the cold (2 to 6 C.) was capable of yielding a satisfactory vaccine, exposure of the same material to room temperatures of 23 to 25 C. for two days resulted in a practically worthless vaccine. The results of many tests indicated that a final concentration of 0.2 per cent solution of formaldehyde acting at 2 to 3 C. yielded the best preparations.

The effect of ultraviolet irradiation (Hanovia Chemical Company spiral quartz-mercury resonance lamp, said to emit about 85 per cent of the energy in the line of 2,537 angstrom units) was studied on relatively clear angle centrifuged, as well as on somewhat opalescent horizontal centrifuged preparations. In the case of St. Louis encephalitis virus the minimal amount of radiation required for complete inactivation of the virus resulted in the complete or almost complete destruction of its immunogenic capacity. Simultaneous tests on aliquot portions of the same St. Louis virus preparation indicated that treating with formaldehyde according to the procedure described yielded a satisfactory vaccine while ultraviolet irradiation did not. Ultraviolet irradiation did not destroy the antigenicity of the Japanese B virus, but in comparative tests the vaccines produced by this method were no more potent and were often less potent than those produced by suitable treatment with formaldehyde. There was a wide range of safety in irradiation of the Japanese B virus, since preparations which, because of insufficient exposure, still contained small amounts of infective virus were no better as vaccines than preparations which had been irradiated for twenty to forty minutes more than was necessary to inactivate the virus.

The effect of ozone and of "soft" (long wavelength) x-rays was studied in collaboration with Dr. Harold J. Kersten of the Department of Physics of the University of Cincinnati in the hope of finding a chemical or physical method that would inactivate the virus and yield more potent vaccines than those obtained with the aid of solution of formaldehyde. Ozone gas, freshly prepared by the passage of a strong electric current through oxygen and bubbled into clear, angle centrifuged virus preparations required more than one and less than two hours for complete inactivation of the virus, and the antigenicity was apparently destroyed along with the virus. With the "soft" x-rays there was no evidence of inactivation after exposure for four hours unless a very thin layer of about 1 to 2 mm. of the clear, angle centrifuged virus was used. Since no more than 1 cc. could be handled at one time, and the relatively large amounts required for assay and study could not be treated without great difficulty, this approach was abandoned as unpractical at the present time.

QUANTITATIVE ASSAY OF THE VACCINES

The desirability of testing the extent of resistance produced by the vaccines within one week and under conditions which may be considered comparable to those obtaining in nature necessitated devising a method of assay based on infection by the subcutaneous, intraperitoneal or intravenous routes. Studies on both the St. Louis and Japanese B viruses have revealed that resistance to infection by peripheral routes, other than the intranasal, develops spontaneously as mice grow older. This spontaneous "maturation resistance" was found to develop at different times and to different extents for the subcutaneous (or intramuscular),

6. Cox, Herald: Personal communication to the authors.

intraperitoneal and intravenous routes. Considerable susceptibility to infection by the intraperitoneal and intravenous routes remains when resistance to subcutaneous or intramuscular infection is practically complete, and when the peak of spontaneous resistance is attained there is greater susceptibility to infection by the intravenous than by the intraperitoneal route. However, because of the greater ease of inoculating large numbers of mice by the intraperitoneal route and because a suitable age period was found during which it was possible to carry out quantitative titrations of susceptibility, this route of infection was chosen for testing the resistance produced by the various vaccines. This method of assay was also facilitated, if not actually made possible, by the use of virus suspensions of the highest possible intracerebral titers. Because there were occasional carriers of pathogenic enteric organisms among the stock of mice we used, the virus-containing brain suspensions were occasionally contaminated and would spoil a whole test. To have a source of known bacteria free virus of the highest possible titer it was necessary to resort to a special method of preserving the virus. The brains of infected 2 to 3 week old mice were ground to a 10 per cent suspension with undiluted rabbit serum which had been inactivated at 56 C. The uncentrifuged suspension, distributed in rubber capped vaccine bottles, was quickly frozen in a mixture of carbon dioxide and alcohol and stored in a box containing solidified carbon dioxide. On thawing and centrifuging these preparations at any time during a period of at least two months we obtained virus suspensions with intracerebral titers as high as or higher than those of fresh virus. We also found that some batches of broth could be highly toxic for the smaller concentrations of virus and therefore used 10 per cent rabbit serum in saline solution for the preparation of all dilutions.

In general two methods of assay, based on resistance to infection by the intraperitoneal route, were used: (1) a so-called "complete assay" in which 3 to 4 week old mice received graded doses of vaccine and one week later were tested for immunity with various doses of virus, and (2) a so-called "screening test" requiring a smaller number of animals, in which 8 to 12 week old virgin female mice received various doses of vaccine and one week later were tested for immunity with a single large dose of virus representing as a rule 10^8 intracerebral and 10 to 20 intraperitoneal LD_{50} doses. In the case of St. Louis encephalitis virus the best results were obtained when, at the time of vaccination, the mice were close to 4 weeks old and were selected individually to weigh not less than 11 nor more than 13 Gm. (this weight may be different for other stocks of mice). Mice younger than 3 weeks of age were not used because they did not develop as good an immunity in one week, while mice older than 4 weeks were not used for the "complete assay" because at the time they were tested for resistance one week later the intraperitoneal titer of the virus was usually not high enough in the unvaccinated controls. Using virus suspensions with intracerebral titers of $10^{-8.0}$ or more, the intraperitoneal titers in the unvaccinated controls ranged between about 1:750 to 1:1,500. The intraperitoneal titrations were therefore carried out with fourfold dilutions of the St. Louis virus, and with mice selected by age and weight as described it was possible to obtain regularly graded results ranging between 100 per cent mortality and 100 per cent survival.

The Japanese B virus behaved differently in that it was pathogenic for approximately 4 week old mice in much smaller amounts by the intraperitoneal route. Thus on some occasions a single intracerebral LD_{50} dose injected intraperitoneally produced fatal infection in 30 per cent of the mice. The best results were obtained when the mice selected for vaccination were 21 to 24 days old and for the stock we used weighed not less than 9 Gm. nor more than 11 Gm. For the most part, however, mice of this age and size, when tested one week later, represent a population of uneven susceptibility (a situation which is undoubtedly also encountered in nature, in man, and other hosts); i. e., the majority are still susceptible to relatively minute amounts of virus given intraperitoneally while others may already be resistant to as much as 10^5 or 10^6 times that amount. For this reason it proved necessary to use about 10 mice for each dilution of virus in the intraperitoneal test and to inoculate the controls with tenfold dilutions extending to 10^{-8} or 10^{-10} and the vaccinated mice with 10^{-1} to 10^{-5}. This high susceptibility of a large proportion of mice to intraperitoneal injection of Japanese B virus disappears by the sixth week of life, and between the sixth and eighth weeks of life the resistance to larg amounts of this virus may be greater than to similar amounts of the St. Louis virus. For this reason the simpler "screening" test with older mice, which has proved most valuable with the St. Louis virus, has frequently given poor results with the Japanese B virus. Because in several tests on large numbers of mice which were 4 to 7 months old the intraperitoneal injection of approximately 10^8 intracerebral LD_{50} doses resulted in fatal infections in 95 per cent of the mice, the possibility that mice of this age may perhaps be more susceptible than those which are approximately 2 months old must still be investigated.

EFFECTS OF ST. LOUIS ENCEPHALITIS VACCINE IN MICE

Horizontal or angle centrifuged as well as uncentrifuged 10 per cent mouse brain suspensions inactivated by 0.2 per cent solution of formaldehyde at 2 to 6 C. were capable of giving rise to significant resistance against infection by the intraperitoneal route within one week after the intraperitoneal injection of a single dose of vaccine. The results presented in table 1 show (*a*) the degree of resistance produced by a single dose of St. Louis vaccine, (*b*) that resistance is apparent after subcutaneous as well as after intraperitoneal vaccination although the latter route is more effective and (*c*) that the nonspecific effect of the intraperitoneal injection of brain tissue is negligible since the administration of the Japanese B vaccine by this route produced no significant resistance to infection with the St. Louis virus. The specificity of the induced resistance was further established when it was shown in simultaneous tests that the same Japanese B vaccine produced effective resistance against the Japanese B virus while the St. Louis vaccine did not. Additional evidence that the immunity produced by the St. Louis vaccine was systemic rather than local was obtained when it was found that mice developed resistance to infection by the intravenous route after introduction of the vaccine into the peritoneal cavity.

The results of many quantitative tests with single doses of vaccine indicated that, while it was possible to establish significant resistance in one week even with amounts of vaccine as small as 0.03 cc., the develop-

ment of immunity was not uniform in all the animals, since a certain number invariably remained susceptible to infection. While it is a well established fact that multiple doses of noninfective vaccines produce a stronger immunity, it was necessary to determine how much could be accomplished by this means within a period of a week. A number of preliminary tests indicated that the immunity engendered in one week by a given small dose of vaccine was decidedly increased zontal centrifuged vaccine prepared from the same lot of mouse brains. In this particular assay the total dose of 0.003 cc. of the uncentrifuged vaccine still induced a significant immune response in that the mice were able to resist eighteen times as much virus as the unvaccinated controls. The results of many tests have indicated that by this method of assay the best vaccines we have been able to prepare have had a minimal immunogenic dose of 0.01 to 0.003 cc.

TABLE 1.—*St. Louis Encephalitis Virus*

1. Influence of route of administration of vaccine. 2. Effect of Japanese encephalitis vaccine against infection with St. Louis encephalitis virus. Resistance of mice to infection by intraperitoneal route one week after vaccination with single dose.

Vaccine	Route of Administration	Dose, Cc.	0.3 Cc. of Indicated Dilution of St. Louis Virus Injected Intraperitoneally: 10	40	160	640	2,560	10,240	LD_{50} Titer *	Immunity Index †
Unvaccinated controls			10/10	9/10	5/10	6/10	2/9	2/10#	640 §	..
St. Louis *	Intraperitoneally	0.5	4/10	1/9	1/10	0/10	....	....	10	64
	Subcutaneously	0.5	7/10	4/10	1/9	1/ 9	....	....	28	23
Japanese B ‡	Intraperitoneally	0.5	8/10	7/10	7/10	4/10	2/9	....	270	2

The mice used in this test were 3 to 4 weeks old at the time of vaccination.

* LD_{50} titer, the dilution of virus at which the 50 per cent mortality end point is calculated to occur by the method of Reed and Muench.

Numerator = number died; denominator = number inoculated.

§ The intracerebral titer of this virus was $10^{-8.3}$/0.03 cc.

* St. Louis vaccine, series C, horizontal centrifuged, 0.2 per cent solution of formaldehyde, $10^{7.6}$ LD_{50} doses per 0.3 cc. before inactivation, prepared 4/7/42, used 4/14/42.

‡ Japanese B vaccine, Nakayama I, horizontal centrifuged, 0.2 per cent solution of formaldehyde. $10^{8.2}$ LD_{50} doses per 0.3 cc. before inactivation, prepared 4/6/42, used 4/14/42.

† Immunity index = $\frac{LD_{50} \text{ titer of virus in unvaccinated mice}}{LD_{50} \text{ titer of virus in vaccinated mice}}$.

TABLE 2.—*Immunogenic Effect of Formaldehyde Treated St. Louis Encephalitis Mouse Brain Vaccines One Week After Inoculation*

Resistance of Mice to Infection by Intraperitoneal Route

Vaccine: Type of Preparation	Total Dose, Cc.	Mode of Administration *	Dilution of Virus Injected Intraperitoneally One Week After First Dose: 10	40	160	640	2,560	10,240	LD_{50} Titer	Immunity Index
Unvaccinated controls			10/10	10/10	10/10	4/8	1/8	0/8	750 †	..
Series N, horizontal centrifuged, 0.2% solution of formaldehyde $10^{7.7}$ LD_{50} doses/0.3 cc. before inactivation; fluid prepared 9/25/42, used 10/6/42	0.3	0.15 × 2	0/9	0/10	0/10	0/8	0/8	....	5—	150+
		0.3 × 1	7/10	3/10	1/10	1/8	0/8	....	24	30
	0.03	0.015 × 2	5/10	3/10	0/8	0/8	0/8	....	14	50
		0.03 × 1	9/10	3/9	6/9	0/8	0/8	....	64	12
Unvaccinated controls			10/10	10/10	9/10	7/10	4/10	2/10	1,660 ‡	..
Series P, horizontal centrifuged, 0.2% solution of formaldehyde $10^{7.6}$ LD_{50} doses/0.3 cc. before inactivation; fluid prepared 10/30/42, used 11/10/42	0.3	0.15 × 2	1/10	1/9	0/10	0/9	....	....	6—	275+
		0.3 × 1	8/10	2/9	0/10	0/10	0/7	....	20	83
	0.03	0.015 × 2	9/10	2/10	2/10	0/10	0/9	....	25	65
	0.01	0.005 × 2	9/10	2/10	1/10	1/10	1/10	....	28	60
Series P, uncentrifuged, 0.2% solution of formaldehyde $10^{8.6}$ LD_{50} doses/0.3 cc. before inactivation; fluid prepared 10/30/42, used 11/10/42	0.3	0.15 × 2	1/9	0/10	1/10	0/10	1/10	....	6—	275+
		0.3 × 1	4/10	3/10	2/10	0/10	0/10	....	15	110
	0.03	0.015 × 2	3/8	0/9	1/10	0/5	0/9	....	9—	185+
	0.01	0.005 × 2	2/10	1/10	1/8	0/10	0/10	....	7—	235+
	0.003	0.0015 × 2	10/10	5/10	5/10	0/10	1/6	....	90	18

All the mice used in these tests were close to 4 weeks old and each was chosen by weight, with few exceptions not less than 11 Gm. nor more than 13 Gm.

* The second dose was given 3 days after the first in each instance: 0.15 × 2 = 2 doses of 0.15 cc. of vaccine undiluted; 0.015 × 2 = 2 doses of 0.15 cc. of vaccine 1:10; 0.005 × 2 = 2 doses of 0.5 cc. of vaccine 1:100; 0.0015 × 2 = 2 doses of 0.15 cc. of vaccine 1:100.

† The intracerebral titer of this virus suspension was $10^{-8.2}$/0.03 cc.

‡ The intracerebral titer of this virus suspension was $10^{-8.5}$/0.03 cc.

when the total amount was administered in two equal doses three days apart. The results presented in table 2 show not only that, by administering the total amount of vaccine in two doses in this manner, it is possible to produce a solid immunity against infection with the largest test doses by the intraperitoneal route, but also that the same amount of vaccine can be about thirty times more effective within one week when it is administered in two doses rather than in a single dose. Thus, in the case of two types of vaccine in series P, 0.01 cc. given in two doses produced as much immunity as 0.3 cc. administered as a single dose. The data in table 2, furthermore, indicate the better protective capacity of the uncentrifuged as compared with the hori-

Significant resistance to infection by the intranasal and intracerebral routes could be induced when larger amounts and more individual doses of the noninfective vaccines were given. Three doses of 0.2 cc. each would protect against 10 to 100 fatal doses by the nasal route, and 4 to 5 doses of 0.2 cc. each of the uncentrifuged vaccines gave rise to resistance against 100 or more 50 per cent mortality doses by the intracerebral route (table 4). The fact that this resistance was not exhibited uniformly by all the vaccinated mice is not peculiar to the noninfective vaccines, since the same phenomenon obtained in mice surviving the subcutaneous injection of about 10^8 intracerebral LD_{50} doses of the living virus. The capacity of the living virus (Webster No. 3 strain)

to give rise to solid resistance against infection by the intracerebral route, reported in the early years after its isolation, has been lost on passage.[7] Tests which we have carried out with the "Hubbard" and "Taylor" strains of St. Louis virus which were isolated in 1937 indicated that they also gave rise to poor or irregular intracerebral resistance after a single injection of live virus.

residual solution of formaldehyde sufficient ammonium hydroxide was added to the vaccines to bring the p_H to about 8.2, their immunogenic potency diminished so rapidly on storage in the refrigerator that at the end of one month the vaccines were practically worthless. Subsequent studies showed that horizontal centrifuged or uncentrifuged vaccines containing 0.2 per cent solution of formaldehyde retained their original potency as

TABLE 3.—*Resistance of Mice to Intracerebral Inoculation of St. Louis Virus After Administration of Uncentrifuged Formaldehyde Treated Vaccines*

Vaccine	Dosage		0.03 Cc. of Indicated Dilution of Virus Injected Intracerebrally					LD_{50} Titer Log of Dilution	Immunity Index
	Total, Cc.	Individual	10^{-5}	10^{-6}	10^{-7}	10^{-8}	10^{-9}		
Unvaccinated controls			....	8/8	6/10	5/10	0/9	7.6	.....
R, 0.2% solution of formaldehyde	0.8	0.2 × 4	5/10	4/10	1/11	....	...	5.5 —?	125 +?
R, 0.4% solution of formaldehyde	1.0	0.2 × 5	5/9	2/10	1/10	....	...	5.4 —?	160 +?

The mice used in this test were approximately 8 weeks old virgin females at the time of vaccination. The first 3 doses of vaccine were given at 48 hour intervals and the others after a rest period of 4 days. The intracerebral test for resistance was carried out 3 weeks after the first dose of vaccine.

TABLE 4.—*Stability of Various Preparations of St. Louis Encephalitis Vaccine Under Various Conditions of Storage*

Vaccine		Storage		Test for Resistance						Minimal Immunogenic Dose	
					Intracerebral LD_{50} Doses in Intraperitoneal Test Dose	Mortality of Unvaccinated Mice Inoculated 0.3 Cc. 10^{-1} Virus Intraperitoneally	Mortality of Vaccinated Mice Inoculated with 0.3 Cc. 10^{-1} Virus Intraperitoneally				
							Total Dose (Cc.) of Vaccine *				
Series	Type of Preparation	Temperature, C.	Days	Date			0.3	0.03	0.01	0.003	Estimated by Inspection	Estimated by Reed-Muench Formula
K, horizontal centrifuged, 0.2% solution of formaldehyde, $10^{7.6}$ LD_{50} doses per 0.3 cc. before inactivation; prepared 8/13/42	Fluid stored without neutralization of formaldehyde, formaldehyde neutralized with $NaHSO_3$ just before administration	2-3	8	8/28/42	$10^{8.4}$	10/10	1/8	3/10	....	9/10	<0.03	0.016
		2-3	32	9/21/42	$10^{8.2}$	11/12	0/11	0/10	....	....	<0.03	0.010
		2-3	68	10/27/42	$10^{8.5}$	11/12	0/12	1/12	4/12	....	<0.01	0.008
		2-3	123	12/21/42	$10^{8.2}$	11/11	0/11	5/11	4/11	8/10	<0.01	0.010
		2-3	140	1/ 7/43	$10^{8.0}$	11/11	0/10	2/11	1/11	11/11	<0.01	0.007
	Fluid, formaldehyde neutralized with $NaHSO_3$ on 8/17/42	2-3	32	9/21/42	$10^{8.2}$	11/12	1/10	5/9	....	....	<0.3	0.048
		2-3	68	10/27/42	$10^{8.5}$	11/12	2/11	10/12	....	....	0.3	0.097
		2-3	123	12/21/42	$10^{8.2}$	11/11	2/11	10/11	....	....	0.3	0.109
	Lyophilized, formaldehyde neutralized with $NaHSO_3$, p_H adjusted to about 7.3, phenylmercuric borate added to 1:50,000 and lyophilized 8/17/42	2-3 + 37.5	18 + 10	9/21/42	$10^{8.2}$	11/12	0/9	2/10	....	....	<0.03	0.013
		2-3 + 37.5	18 + 46	10/27/42	$10^{8.5}$	11/12	1/12	9/12	9/11	....	0.3	0.075
		2-3	119	12/21/42	$10^{8.2}$	11/11	2/10	6/11	5/11	11/11	0.01	0.022
H, angle centrifuged, 0.2% solution of formaldehyde, $10^{7.5}$ LD_{50} doses per 0.3 cc.; prepared 7/30/42	Lyophilized by foregoing procedure 8/2/42	2-3	43	9/21/42	$10^{8.2}$	11/12	0/11	1/10	....	....	<0.03	0.011
		2-3	134	12/21/42	$10^{8.2}$	11/11	0/11	4/11	9/10	10/10	0.03	0.022
N, horizontal centrifuged, 0.2% solution of formaldehyde, $10^{7.7}$ LD_{50} doses per 0.3 cc. before inactivation; prepared 9/25/32	Fluid	2-3	11	10/13/42	$10^{8.2}$	10/10	0/10	7/10	5/10	....	0.03 ?	0.025
	Lyophilized by foregoing procedure 10/5/42	2-3	0	10/13/42	$10^{8.2}$	10/10	0/10	1/10	6/10	....	0.03	0.013
		2-3	35	11/18/42	$10^{8.3}$	10/11	0/3	3/10	....	....	0.03	0.015
		2-3 + 37.5	28 + 7	11/18/42	$10^{8.3}$	10/11	0/10	4/9	....	....	0.03	0.024
		2-3	86	1/ 7/43	$10^{8.0}$	11/11	0/10	5/11	8/11	10/10	0.03	0.021
N, uncentrifuged, 0.2% solution of formaldehyde, $10^{8.2}$ LD_{50} doses per 0.3 cc.; prepared 9/25/42	Fluid stored without neutralization of formaldehyde	2-3	11	10/13/42	$10^{8.2}$	10/10	0/11	0/11	0/11	....	<0.01	0.005—?
		2-3	25	10/27/42	$10^{8.5}$	11/12	....	0/12	1/12	9/12	<0.01	0.005
		2-3	97	1/ 7/43	$10^{8.0}$	11/11	0/11	0/10	2/11	11/11	<0.01	0.006

* Administered in two doses as indicated in table 2.

The formaldehyde treated noninfective vaccines were also found to give rise to neutralizing antibodies in mice. The neutralizing antibody response against the St. Louis virus in mice even when living virus is used is of a low order and irregular, except after multiple doses, and may not be demonstrable in mice which are actively resistant to infection.

STABILITY OF ST. LOUIS ENCEPHALITIS VACCINES

It was found early during the course of this work that when to reduce the irritating properties of the determined by quantitative tests for five months or longer when they were stored in a refrigerator (2 to 3 C.) in the fluid state without neutralization of the formaldehyde. That a certain amount of residual formaldehyde is necessary for the preservation of the potency of these vaccines was further proved by the fact that complete neutralization of the formaldehyde by means of sodium bisulfite without adjusting the p_H to neutrality or slight alkalinity also resulted in a definite drop in the immunogenic potency of the vaccine when it was stored in the fluid state. Because the untreated and unneutralized formaldehydized vaccine gives rise

7. Personal communication to the authors from Dr. Webster.

to pain and local reactions on inoculation in human beings, and because it could not be expected to retain its stability unless it was shipped under refrigerated conditions, an attempt was made to obtain a more suitable preparation by lyophilization.

When formaldehydized mouse brain suspensions such as we used, with or without added ammonium hydroxide, are dried from the frozen state, they become denatured to such an extent that rehydration is practically impossible. We are indebted to Mr. Willard G. Webster of Sharp and Dohme, Inc., for the suggestion that this denaturation can be avoided when sodium bisulfite is used for neutralization of the formaldehyde. Tests of various preparations on human volunteers indicated that in order to eliminate the pain and local reactions it was necessary to adjust the p_H to about 7.3 as well as to neutralize the formaldehyde. The final procedure adopted for lyophilization of the uncentrifuged vaccine was therefore as follows:

1. After the infectivity of the virus has been destroyed and the intracerebral titration has indicated the presence of a satisfactory titer of virus before inactivation, i. e. any time after a period of eight to fourteen days, sufficient powdered sodium bisulfite is added to neutralize the residual formaldehyde completely. The Schryver test for formaldehyde is used as a check after diluting the vaccine 1 : 10 with distilled water, because the suspended brain tissue interferes with the reaction. Three to 4 mg. of sodium bisulfite per cubic centimeter of vaccine was usually sufficient.

2. The p_H, which is about 6.6 at this stage, is adjusted to about 7.3 with sodium hydroxide.

3. Enough of a 1 : 100 solution of phenylmercuric borate is then added for antiseptic purposes to yield a final concentration of 1 : 50,000.

4. After removal of appropriate amounts for aerobic and anaerobic cultures and for intracerebral infectivity tests, the remainder of the vaccine was immediately distributed in lyovac containers, frozen in a mixture of solidified carbon dioxide and alcohol, and dried from the frozen state.

5. On completion of the lyophilization in twenty-four to forty-eight hours, the rubber stopper and glass sealed, evacuated ampules were stored in the refrigerator at 2 to 3 C.

Many tests on vaccines lyophilized in this manner showed that the potency was either fully preserved or only slightly diminished. It cannot be said that the mechanical conditions of lyophilization were optimal in our laboratory and it is not improbable that more adequately dried preparations could be obtained under the superior conditions obtaining in large scale production. However, it is noteworthy that storage at 37.5 C. and high humidity for a period of seven to ten days did not appear to diminish significantly the potency of such lyophilized vaccines, although longer periods of storage under these conditions were definitely detrimental. The indications are, however, that storage of the lyophilized vaccines under refrigerated conditions should preserve their potency for long periods of time.

Most of the quantitative tests on the stability of different types of St. Louis vaccines were carried out by the simpler "screening" method of assay, but basic results were confirmed by the more complete assays in younger mice. The data presented in table 4 show results obtained in the "screening" tests on several vaccines. It may be seen that with only occasional exceptions it is possible to obtain cleancut endpoints and reproducible values for the minimal immunogenic dose. The potency of a St. Louis encephalitis vaccine may be checked conveniently by this simpler method at frequent intervals, and a satisfactory vaccine should have a minimal immunogenic dose which is not less than 0.01 cc.

TABLE 5.—*Japanese B Encephalitis Virus, Nakayama Strain*

Effect of different methods of inactivation on immunogenic capacity of angle centrifuged mouse brain virus. Resistance to intraperitoneal infection induced by a single dose in one week.

Vaccine		Test for Resistance; Dilution of Virus Injected							LD_{50} Titer Log of	Immunity
Preparation	Dose, Cc.	10^{-1}	10^{-2}	10^{-3}	10^{-4}	10^{-5}	10^{-6}	10^{-7}	Dilution	Index
Unvaccinated controls		10/10	8/10	9/10	8/10	5/10	9/10	6/10	6.3+	.....
0.2% solution of formaldehyde, 5-6 C.; prepared 6/23/42, $NaHSO_3$ added 6/25/42, used 7/1/42	0.3	5/10	3/10	0/8	1/8	1/8	....	....	1.5	60,000 +
	0.03	7/8	6/9	4/9	5/9	1/9	....	....	3.1	1,000 +
	0.003	8/9	9/9	2/9	4/9	2/8	....	....	3.0	2,000 +
As above; lyophilized 6/26/42 to 6/28/42, used 7/1/42	0.3	2/9	6/9	1/9	0/9	1/9	....	....	1.7	40,000 +
	0.03	6/10	5/9	0/9	1/9	1/9	....	....	1.9	25,000 +
Ultraviolet 40 min.* 6/23/42; stored at 5-6 C., used 7/1/42	0.3	7/9	8/9	3/8	2/8	2/8	....	....	2.9	2,500 +
	0.003	9/9	7/9	4/8	4/8	3/8	....	....	3.6	500 +
Ozone 2 hours † 6/23/42; stored at 5-6 C., used 7/1/42	0.3	9/9	9/9	7/9	6/9	8/9	....	....	5.0+	?, < 20
	0.003	9/9	8/9	7/9	7/9	4/9	....	....	5.0+?	?, < 20

Approximately 3 to 4 week old mice used in this test.

* The infectivity of samples taken at different times during the ultraviolet irradiation was as follows: 20 minutes, 3/10; 30 minutes, 0/10; 40 minutes, 0/10.

† Infectivity tests on the ozone treated material were as follows: One hour, 10/10; 2 hours, 0/10.

EFFECTS OF JAPANESE B ENCEPHALITIS VACCINES IN MICE

In general the basic properties exhibited by the St. Louis encephalitis vaccines obtain also for the Japanese B vaccines, except that the angle centrifuged preparations of the latter as a rule contained more virus before inactivation (10^8 LD_{50} doses or more per 0.3 cc.) and possessed greater immunogenic potency. The data presented in table 5 on the immunogenic capacity of several different types of noninfective vaccines prepared from the same lot of angle centrifuged mouse brain virus clearly show the superiority of the formaldehyde method over ultraviolet irradiation and the practically negative results obtained when ozone was used to inactivate the virus. It may also be seen that the formaldehyde treated vaccine dried from the frozen state according to the procedure previously described produced excellent protection within one week even after a single dose of 0.03 cc. The fact that in the fluid preparation of the same vaccine the formaldehyde was neutralized with sodium bisulfite six days before it was used may perhaps account for the poorer resistance it produced with the 0.03 cc. dose. It is noteworthy that the protection afforded by a single dose of the vaccine is just as definite at two months as at one week and may still be demonstrable six months after vaccination.

Since ultraviolet light has come to be regarded by many as being capable, under suitable conditions, of abolishing infectivity of the virus with the least deterioration in the antigenicity of the preparation, studies were carried out to determine to what extent the antigenicity diminished when the irradiation was carried beyond the minimal time required for the inactivation of the virus. Portions of the same angle centrifuged preparation of virus were distributed into four quartz tubes, which were irradiated one at a time, the course of virus inactivation being determined separately at given intervals in each tube. The data presented in table 6 show that while twenty-five to thirty minutes was required to inactivate the virus, preparations which had been irradiated for twenty, twenty-five, thirty or forty minutes did not vary significantly in their capacity as vaccines. It was thus quite clear that even when the least possible amount of ultraviolet irradiation was used, it was not possible to obtain a better vaccine, and seemingly not even as good a one, as could be prepared by proper treatment with formaldehyde.

Japanese B encephalitis vaccines in which part of the formaldehyde and the acidity were neutralized by ammonium hydroxide were just as unstable on storage in the refrigerator as the St. Louis encephalitis vaccines. Here again it was possible to obtain satisfactory stability by lyophilization according to the previously described procedure. That there are limits to this stability, however, is shown by the tenfold drop in potency which was demonstrated to occur when some of the ampules containing the lyophilized vaccine were stored in an incubator at 37.5 C. and high humidity for a period of seventeen days (table 7).

The most reliable method for assaying the immunogenic potency of the Japanese encephalitis vaccine is illustrated in a protocol presented in table 8. The various amounts of vaccine are administered intraperitoneally in two doses three days apart and the mice are tested for resistance by the intraperitoneal route with tenfold dilutions of virus one week after the first dose of vaccine. The mice are observed for a period of three weeks after inoculation of the virus and the results shown in table 8 indicate that even the 0.001 cc. dose of vaccine produced a significant increase in resistance. It should be noted here that it is difficult to define precisely the numerical value of an immunity index that may be regarded as indicating the least amount of significant resistance in this type of test, but for practical purposes a minimal value of 100 was selected. Because the degree of susceptibility of the mice used in a given test determines not only the titer of the virus in the control animals but also the size of the immunity index, the chief usefulness of the index is limited to a comparison of the values obtained with

TABLE 6.—*Japanese B Encephalitis*

Effect of ultraviolet irradiation for different periods of time on antigenicity of angle centrifuged mouse brain virus. Resistance of mice to intraperitoneal infection one week after single dose of vaccine.

Inactivation of Virus in Specimen		Vaccine		0.3 Cc. of Indicated Dilution of Virus Injected Intraperitoneally									LD50 Titer Log of Dilution	Immunity Index
Time, Min.	Test for Virus	Total Time, Irradiated, Min.	Dose, Cc.	10^{-2}	10^{-3}	10^{-4}	10^{-5}	10^{-6}	10^{-7}	10^{-8}	10^{-9}	10^{-10}		
Unvaccinated controls.....				9/10	8/10	5/10	7/10	6/10	6/10	4/10	0/10	0/6	6.1*	
15	5/5													
20	4/4		0.3	3/8	0/7	0/6	2/6	0/6	0/6	0/5	...	...	2.0 —?	12,500 +
25	0/5	40												
30	0/5		0.003	5/6	1/6	2/6	3/6	3/6	1/6	3/6	...	...	4.4	50
40	0/5													
15	5/5													
20	5/5		0.3	4/7	2/6	3/6	0/6	0/6	0/6	0/6	...	...	2.8	2,000
25	1/4	30												
30	0/4		0.003	5/6	3/6	0/5	1/5	4/6	3/6	1/6	...	...	4.0	125
15	5/5		0.3	5/8	1/6	3/5	1/5	0/5	0/6	0/6	...	...	2.7	2,500
20	4/5	25												
25	2/4		0.003	8/8	6/6	2/4	2/5	2/5	2/6	2/6	...	...	5.6	3
15	5/5													
20	5/5	20	0.003	4/6	3/6	3/6	3/5	1/5	2/5	1/5	...	...	4.4	50
	(1/6)†													

A single preparation of angle centrifuged virus which had $10^{8.5}$ LD_{50} doses/0.3 cc. before inactivation provided the material for the different ultraviolet irradiation exposures, which were carried out on the same day in 4 different quartz tubes.
Approximately 3-4 weeks old, sexually immature mice were used in this test.
* The intracerebral LD_{50} titer of this virus was $10^{-8.4}$/0.03 cc.
† Infectivity of same preparation after 9 days' storage at 2 to 3 C., when it was used as a vaccine.

TABLE 7.—*Stability of Lyophilized, Angle Centrifuged Formaldehyde Treated Japanese B Encephalitis Vaccine*

Resistance to Intraperitoneal Infection Induced by a Single Dose in One Week

Lyophilized Angle Centrifuged Vaccine		0.3 Cc. of Indicated Dilution of Virus Injected Intraperitoneally									LD50 Titer Log of Dilution	Immunity Index
Storage	Dose, Cc.	10^{-2}	10^{-3}	10^{-4}	10^{-5}	10^{-6}	10^{-7}	10^{-8}	10^{-9}	10^{-10}		
Unvaccinated controls.....		9/10	7/10	6/10	5/10	7/10	3/10	3/10	0/10	0/10	5.6*	.....
Refrigerator, 2 to 3 C. 29 days	0.3	4/8	0/6	0/5	0/5	1/6	0/6	0/6	...	...	2.1 —?	3,200 +?
	0.03	2/8	0/3	2/4	1/5	1/5	0/6	0/6	...	...	2.0 —?	4,000 +?
	0.003	5/9	2/6	2/4	1/5	2/5	2/5	1/6	...	...	3.5	125
Refrigerator + incubator, 2 to 3 C., 12 days; 37.5 C., 17 days	0.3	1/6	0/4	0/6	0/6	0/6	1/6	1/5	...	...	1.9 —?	5,000 +?
	0.03	6/7	2/6	1/6	0/6	2/6	3/6	0/6	...	...	3.5	125
	0.003	7/9	1/6	2/6	4/6	3/6	3/5	3/6	...	...	5.0	4

The mice used in this test were sexually immature and 3 to 4 weeks old at the time of vaccination.
* The intracerebral titer of this virus was $10^{-8.0}$ per 0.03 cc.

different doses of the same or different vaccines in the same test (table 9). Vaccines possessing a minimal immunogenic dose of 0.003 to 0.001 cc., as determined by this type of assay, are the best that have been achieved thus far.

It proved quite difficult to produce significant resistance to infection by the nasal route and even more so to infection by the intracerebral route. At least three doses of 0.2 cc. each had to be administered to approximately 2 month old mice to produce resistance against 10 to 100 intranasal fatal doses, while even five doses, 0.5 cc. each, of formaldehyde treated angle centrifuged vaccine failed to give rise to significant resistance to intracerebral infection. However, five doses of 0.2 cc. each of the uncentrifuged vaccines protected the majority of mice against ten fatal intracerebral doses. In general, most groups of mice inoculated with the various types of formaldehyde treated vaccines developed significant amounts of neutralizing antibodies, although the titers varied considerably in different groups of animals.

TABLE 8.—*"Complete Assay" on Japanese B Encephalitis Vaccine*

(Uncentrifuged 10 per cent mouse brain suspension containing 0.2 per cent solution of formaldehyde.)
Mice: 3 to 4 weeks old; 9 to 12 Gm. at time of first dose of vaccine.
Vaccination: 11/30/42, first dose of vaccine; 12/3/42, second dose of vaccine.
Test for Immunity: 12/7/42, intracerebral LD_{50} titer of virus used = $10^{-7.6}/0.03$ cc.

Dosage of Vaccine		0.3 Cc. of Indicated Dilutions of Virus Injected Intraperitoneally								LD_{50} Titer *	
Total, Cc.	Individual, Cc.	10^{-1}	10^{-2}	10^{-3}	10^{-4}	10^{-5}	10^{-6}	10^{-7}	10^{-8}	Log of Dilution	Immunity Index
Unvaccinated controls.....		6/11	5/10	4/7	7/10	5/10	5/9	3/10	0/10	4.3	.....
0.3	0.15 × 2	0/10	0/10	0/10	0/10	0/9	....	....	....	0.5 —?	6,400 +?
0.03	0.015 × 2	3/10	0/10	0/10	0/10	0/9	....	....	....	0.7 —?	4,000 +?
0.003	0.0015 × 2	2/10	2/9	2/8	1/9	1/10	....	....	....	1.0	2,000
0.001	0.0005 × 2	2/10	3/9	1/10	2/9	2/10	....	....	....	1.3	1,000

* The Reed-Muench accumulation formula for calculating the 50 per cent mortality endpoint was used here despite the fact that the data are not suited for this method because there is no regular gradation from 100 per cent mortality to 100 per cent survival. The mehod, however, provides convenient mathematical expressions which may be used for comparative purposes. Actually by inspection of the data it is evident that the adequately vaccinated mice are resistant to 100,000 to 1,000,000 times the amount of virus that is fatal to about 50 per cent of the unvaccinated controls.

EFFECT OF ST. LOUIS AND JAPANESE B ENCEPHALITIS VACCINES ON HUMAN VOLUNTEERS [7a]

The purpose of testing these vaccines on human beings was to determine (*a*) the safety with which they may be administered and the type of local or systemic reactions that might be expected and (*b*) the amount that may represent an adequate antigenic stimulus. A total of 51 volunteers, consisting of laboratory personnel and medical students, received subcutaneously various doses and preparations of one or the other of these vaccines, and tests for neutralizing antibodies were carried out on serums obtained from them before and at various intervals after vaccination. There were no systemic reactions, and when the lyophilized preparations, in which both the formaldehyde and the acidity were neutralized, were administered in 2 cc. doses the pain of the injection and local reactions was also eliminated. There were no hypersensitive local reactions when the second dose of 2 cc. was administered three days after the first, but some were encountered when the interval was one week. Of various types of St. Louis encephalitis vaccines that were tested the uncentrifuged lyophilized preparation was the only one to stimulate antibody production in human beings. Even in this group the antibody response was evident in only 50 per cent of the individuals at two weeks, and there was no difference, in the small group that was studied, between those receiving two doses of 2 cc. or two doses of 5 cc. (table 10). Those who had no response at two weeks were negative also at six weeks, and at least 1 who was distinctly positive at two weeks (A. Ber., table 10) became distinctly negative at six weeks. Since we as well as others have found that resistance to infection with St. Louis encephalitis virus can be present in the absence of demonstrable neutralizing antibodies, we are not inclined to draw any conclusions from the human data beyond the one that two doses of 2 cc. of the uncentrifuged lyophilized St. Louis vaccine contains enough antigen to stimulate a neutralizing antibody response in a certain proportion of adult human beings. For this reason we would also be inclined to use this dosage in any field trials with this vaccine in human beings.

TABLE 9.—*Summary of Results of a Simultaneous "Complete Assay" on Various Types of Vaccines Prepared from the Same 10 Per Cent Suspension of Japanese B Virus*

Type of Preparation	Immunity Indexes with Different Doses (Cc.) of Vaccine				
	0.3	0.03	0.01	0.003	0.001
Angle centrifuged, 0.2 per cent solution of formaldehyde, fluid	6,400	5,000	5,000	125	.....
Uncentrifuged, 0.2 per cent solution of formaldehyde, fluid *	6,400	4,000	.....	2,000	1,000
Uncentrifuged, 0.4 per cent solution of formaldehyde, fluid	6,400	5,000	.....	3,200	500
Uncentrifuged, 0.4 per cent solution of formaldehyde, lyophilized	5,000	6,400	.....	320	640

* The detailed data of this part of the test are shown in the preceding table (table 8).

In the case of the Japanese encephalitis vaccine a definite neutralizing antibody response was obtained with angle centrifuged lyophilized vaccine, and one may therefore expect an even better response with the uncentrifuged vaccine. Considerable difficulty was encountered in obtaining suitable human volunteers for the Japanese encephalitis neutralizing antibody studies, because tests for this antibody on over 80 "normal" adults from the Cincinnati region, including only a few laboratory workers exposed to the virus, revealed an unusually high incidence of positive results comparable in titer to those recorded for patients convalescent from the disease in Japan. The perplexing character of the data is well illustrated by the results of tests on two

7a. Members of the staff of the Children's Hospital Research Foundation and members of the second and third year classes of the University of Cincinnati College of Medicine offered themselves without any reservation as subjects for these studies.

groups of students from the University of Cincinnati College of Medicine. Among one group of 29 third year students bled on Aug. 13, 1942 there were 2 with distinctly positive serums against the Japanese virus (neutralization indexes of 100 to 600) while all the others were just as distinctly negative with neutralization indexes not exceeding a value of 5. The positive results were reproducible not only on the same specimens of serum but also on subsequent specimens obtained on Sept. 2, 1942. One of these positive serums also neutralized the St. Louis encephalitis virus while the other one did not. Twelve of the "negative" students were selected to receive the Japanese encephalitis angle centrifuged, lyophilized vaccine, and additional prevaccination specimens obtained on August 27 were again negative. Seven of these 12 students, however, showed neutralizing antibodies (indexes ranging from 25 to 2,500) two weeks after vaccination. In a search for suitable volunteers to receive the uncentrifuged Japanese vaccine, a group of 21 second year students were bled on Dec. 3, 1942 and positive tests for Japanese B "antibody" were obtained on 18 of the 21 serums. Only 1 of these 18 serums also neutralized the St. Louis virus. These positive results with the Japanese virus were reproducible on the same specimens of serum and with one exception also on subsequent specimens obtained on Dec. 21, 1942 or Jan. 12, 1943. There were even some "rises" in titers in a few instances on subsequent tests, which, if the students had been vaccinated, might have been attributed to the vaccination.

It is obviously difficult to interpret these data. Either the Japanese B virus is widely distributed in the United States and has not yet been isolated (which we doubt) or else certain human beings may possess the capacity of inactivating this virus without having been exposed to it. Certain other studies which we have carried out in this laboratory on hamsters and rats born and raised under isolated conditions and tested for neutralizing antibodies against St. Louis encephalitis or vesicular stomatitis virus respectively indicated that the latter possibility is not altogether improbable.

TABLE 10.—*St. Louis Encephalitis Virus*

Character of antibody response among some of the human beings inoculated with a lyophilized uncentrifuged vaccine

Vaccination	Subject	Time in Relation to Vaccination Serum Obtained	Final Dilution of Virus 10^{-5}	10^{-6}	10^{-7}	10^{-8}	LD_{50} Titer Log of Dilution	Neutralization Index *
Normal rabbit serum control			5/5	5/5	4/5	0/5	7.4	.....
2 doses 2 cc. each 3 days apart	V. Ess.	18 days before vaccine	5/5	4/4	4/5	1/5	7.5	—1
		Just before vaccine	5/5	5/5	5/5	0/5	7.5	—1
		1 week after first dose	5/5	4/4	1/5	0/4	6.6	6
		2 weeks after first dose	1/5	1/5	0/4	0/5	4.7 —?	500 +
	A. Far.	18 days before vaccine	5/5	5/5	3/5	0/5	7.2	2
		Just before vaccine	5/5	4/4	4/5	0/5	7.4	1
		1 week after first dose	5/5	5/5	3/5	0/2	7.2	2
		2 weeks after first dose	5/5	1/5	0/5	0/5	5.6	60
2 doses 5 cc. each 3 days apart	A. Ber.	18 days before vaccine	4/4	4/4	5/5	1/5	7.6	—2
		Just before vaccine	5/5	5/5	4/5	1/5	7.5	—1
		1 week after first dose	5/5	4/5	4/5	0/5	7.3	1
		2 weeks after first dose	3/5	1/5	0/5	0/4	5.3	125
	B. Ran.	18 days before vaccine	5/5	5/5	3/5	0/5	7.2	2
		Just before vaccine	5/5	5/5	4/5	0/5	7.4	1
		1 week after first dose	5/5	5/5	3/5	0/3	7.2	2
		2 weeks after first dose	5/5	3/5	1/4	0/5	6.3	13

* Neutralization index = $\frac{LD_{50} \text{ titer of virus in control serum-virus mixture}}{LD_{50} \text{ titer of virus in test serum-virus mixture}}$

SUMMARY AND COMMENT

The essential features of the St. Louis and Japanese B encephalitis vaccines described in the present communication are as follows:

1. Strains of virus were selected which yielded high titers in the brains of 2 to 3 week old mice and which were found to be more antigenic than others tested. Various portions of embryonated eggs, and the brains of hamsters and young sheep were found to be unsatisfactory, for one or another reason, as the source of virus for the vaccines.

2. The vaccines consist of uncentrifuged 10 per cent mouse brain suspensions in isotonic solution of sodium chloride in which the virus has been rendered noninfective by 0.2 per cent solution of formaldehyde, the entire process of inactivation having taken place in the cold (2 to 3 C). Other methods of inactivation including ultraviolet light and ozone were unsatisfactory. Vaccines in which most of the brain tissue was removed by centrifugation were not as potent.

3. The vaccines retained their original potency only when they were stored in the cold without neutralization of the residual formaldehyde but not when the formaldehyde and acidity were neutralized sufficiently to permit their use in human beings without undesirable reactions. This difficulty was overcome by lyophilization of the vaccines according to the following procedure: (*a*) addition of sufficient sodium bisulfite to yield a negative Schryver test for formaldehyde, (*b*) neutralization of the acidity with sodium hydroxide to a p_H of about 7.3 and (*c*) addition of phenylmercuric borate to a final concentration of 1 : 50,000 as an antiseptic.

The resulting product is readily rehydrated and on inoculation in human beings is essentially free of pain and local reactions.

4. These vaccines were effective chiefly in producing resistance against infection by peripheral routes such as the intravenous or intraperitoneal. Only when large amounts and multiple doses of the uncentrifuged vaccines were given to mice was it possible to induce resistance to 10 to 100 minimal lethal doses of virus by the intranasal or intracerebral routes. For this rea-

son the antigenic potency of these vaccines is assayed quantitatively in mice by determining the minimal dose required to produce significant resistance to infection by the intraperitoneal route within one week. The potency of the best St. Louis vaccines was such that 0.01 to 0.003 cc. (administered in two doses three days apart) fulfilled this criterion, while in the case of the Japanese encephalitis vaccines the minimal immunogenic dose was 0.003 to 0.001 cc. While single doses produced significant resistance to intraperitoneal infection within one week, it was found that the administration of the total amount of vaccine in two equal doses three days apart produced an immunogenic effect within one week equivalent to that obtained with thirty times that amount of vaccine given as a single dose.

5. Tests on human volunteers indicated that two doses of 2 cc. given three days apart could be administered without fear of local or systemic reactions and that this amount of vaccine contained enough antigen to stimulate the development of neutralizing antibodies in about 50 per cent of adults.

It is conceivable that, in the face of a very severe developing epidemic of encephalitis proved to be caused by either one of these viruses, it may be desired to test the effectiveness of such vaccines in protecting human beings against these diseases. It is obvious that no such tests will be possible unless sufficiently large amounts of these vaccines are prepared ahead of time and maintained under suitable conditions of storage with repeated assays at appropriate intervals in readiness for such an emergency. In contemplating such a step one may keep in mind the Russian experience with a similar vaccine in protecting against the spring-summer tick-borne encephalitis.[8] From the few details available to us, it appears that the Russian encephalitis vaccine consisted of 0.5 to 1 per cent emulsion of mouse brain in which the virus was inactivated by solution of formaldehyde (1:600 to 1:750) at 2 to 5 C., and that experimentally it was also chiefly effective against peripheral inoculation of the virus. In one prophylactic experiment on human beings two doses of this vaccine (amount not indicated) were administered to 1,527 individuals residing in an endemic zone. Neither local nor systemic reactions resulted from the vaccination, and while only 2 mild cases of encephalitis occurred among the 1,527 vaccinated persons, there were 44 cases including 11 fatalities among the 2,942 nonvaccinated controls.

8. Smorodintseff, A. A.: The Spring-Summer Tick-Borne Encephalitis, Arch. f. die ges. Virusforsch. **1**: 468, 1939-1940. New Developments in Knowledge of Encephalitis, editorial, J. A. M. A. **117**: 1361 (Oct. 18) 1941.

Bread Making.—The materials that have been used in bread making range from lotus seeds in Egypt to moss in the Scandinavian countries. Potatoes in Germany, chestnuts in Italy, peas and beans in Mexico and millet in China are other unusual materials used at the present time in the making of bread. Wheat, rye and corn are the cereals most commonly used for this purpose, but barley and oats are also employed to some extent. The first breads were probably unleavened, that is made without the use of yeast or other leavening agents. The Jews, though acquainted with the use of leaven, were enjoined to use unleavened bread at the time of the first feast of the Passover (Exodus 12:15-20, 13:6-7) and its use is still a part of this ceremonial. . . . Barley bread over 4,000 years old, in which the outlines of yeast cells were still clearly visible, has been found in Egypt.—Peterson, William H.; Skinner, John T., and Strong, Frank M.: Elements of Food Biochemistry, New York, Prentice-Hall, Inc., 1943.

SOME CURRENT MEDICOMILITARY PROBLEMS

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The war has now progressed to a point where every one is definitely involved in its complexities and ramifications and is committed to playing his part in the holocaust. Physicians, even earlier than most groups, became aware of the inevitable requirements and demands which would be made, or develop, as a consequence of the military, industrial and continuing civilian needs for adequate medical care. All efforts have been directed toward a single fundamental purpose, but the problems which have arisen and required solution have been multiplex and extremely variable as far as the immediate readjustments which their accomplishment has entailed. In every sphere, however, resourcefulness, flexibility of character, ingenuity, determination and at least a modicum of patience and tolerance have been required. The revamping of plans and ambitions, and the personal sacrifices involved in meeting the exigencies of our times, have tested well the normal and physical endurance and the adaptability of each of us.

That all this has been accomplished so speedily and efficiently merits a review of how such things were performed, at the same time setting forth what further will inevitably be required of medicine or physicians to assure the successful termination of this war.

With the threat of war towering and thundering upon us, the first and most urgent problem which arose and required immediate solution was to provide a skeleton crew of physicians to participate in the initial recruitment and induction of military manpower. Members of the Medical Department of the Regular Army, aided by a comparatively small group of reserve medical officers, quickly and efficiently set themselves to the task of selecting the mentally, emotionally and physically qualified nucleus of what has since become an imposing and powerful military machine.

Medical schools and hospitals throughout the country reincarnated the base and evacuation hospitals which were staffed from their ranks in World War I, thus quickly establishing a reserve force of experienced and enthusiastic physicians and surgeons whose services became immediately available. The establishment of this bulwark against epidemic disease and military casualties was cheerfully done in spite of the recognition by the affiliated institutions that the withdrawal from their faculties and staffs would seriously deplete their personnel, require drastic readjustments and impose great hardships on their functional capacities.

More than a year ago the roster of regular and activated reserve medical officers had reached an impressive figure. At present there are on active duty with the various branches of the armed forces more than 40 per cent of the usable medical personnel of the country. The subtraction from civilian life of the medical services represented by this large proportion of the normal total connotes the tremendous burden which has been placed on, and which is being so admirably borne by, the thinned ranks of the remaining civilian physicians. The parallel gigantic industrial expansion has added further to the tax placed on their physical endurance and professional capacity.

All this has been done with minimal and remarkably slight impairment of medical service to the civilian population, albeit luxury and unnecessary medical attention have been curtailed and greatly eliminated, a consequence which has inadvertently been beneficial in establishing and stimulating the development of an improved civilian morale.

The metamorphosis from civilian to military life for physicians has been rapid and has not only required changes in interests but has necessitated special training to prepare them to shoulder new responsibilities. The acquisition of hitherto unpossessed knowledge of military customs and practices has required intensive study, including reeducation in many phases of daily life, professional activities and interests. The training of medical officers has been accomplished by several methods and in various types of military installations. The traditional training ground, the Medical Field Service School at Carlisle Barracks, Pennsylvania, has been expanded to serve as the principal center for tactical and field service; officer pools, including the Army Medical Center in Washington and those which have been established at various recently built general hospitals, have fulfilled an extremely useful purpose in orienting recently enlisted medical officers and have also served as liaison agencies in facilitating the staffing of new hospitals and special medical service organizations such as the Auxiliary Surgical Groups; instructional courses at the Chemical Warfare School of Edgewood Arsenal, Maryland, have been conducted in an intensive fashion to acquaint medical officers with the peculiar problems connected with the management of gas casualties; refresher courses in specialized fields of medicine including tropical medicine, general surgery, neurosurgery, thoracic surgery, maxillofacial surgery and orthopedic surgery have been provided through the cooperation of medical schools throughout the country; flight surgeon training, to acquaint medical officers attached to the Army Air Forces with the unique phases in the expanding field of aviation medicine, has been greatly augmented to meet present and anticipated requirements. The magnitude of this training program and the rapid and impressive manner in which it has been initiated have been possible only because of the foresight and detailed planning of the Surgeon General and his staff along with cooperating Army organizations, the National Research Council, the universities and the many civilian groups and individuals whose interests and activities have been intimately connected with matters pertaining to the Medical Department of the Army. To promote and improve further the quality of medical service and to insure the interchange of significant observations and newly acquired knowledge, as well as to coordinate the medical and surgical activities both in the zone of the interior and in the various theaters of operations, specially qualified consultants in medicine and surgery have been assigned to the service commands in this country and to the theaters of operations abroad. Already, from the consultant groups, there have been received valuable reports which have made possible appropriate modifications of existing medicomilitary practice and the inauguration of more efficacious innovations.

CHANGE IN METHOD OF PROCURING PHYSICIANS

We have now come to a stage where it has become necessary to apply more selective criteria in the apportionment of civilian, industrial and military personnel. Accordingly, the method of procuring doctors for the Medical Department of the Army has been changed. The method, which has been described in detail [1] in a recent issue of THE JOURNAL OF THE AMERICAN MEDICAL ASSOCIATION, consists essentially in the establishment of an Officer Procurement Service which is the only agency authorized to solicit applications for commissions. The state chairman of the procurement service for doctors will furnish to the national headquarters of that service (the War Manpower Commission) the names of available individuals. The national headquarters will forward to the individual a notice of his availability and a card for him to sign and return to the state chairman, who will prepare proper availability clearance papers which will permit the preparation of proper application. The completely processed papers will then be sent directly to the Surgeon General. By arrangement with the national headquarters of the Procurement and Assignment Service the individual will be contacted and the card previously referred to will be furnished him in order that he may apply through the state chairman of the Procurement and Assignment Service for a commission. In the past such inquiries have been answered directly from the Office of the Surgeon General and application blanks furnished the individual, but such procedure will no longer be followed.

The Army's most urgent need is for young, vigorous and alert medical officers, who comprise the vanguard of army medical service and on whom rests a burden of professional performance which must be accomplished under the most trying circumstances and adverse conditions. The duties of these officers, whose versatility must be sufficient to meet their functions as physicians, sanitarians and soldiers, far transcend the prosaic existence with which their position is commonly associated. In their capacity as physicians they must practice the healing art in respect to disease and injury, sustain and bolster the spirit of their troops, anticipate, promptly recognize and correct mental hazards which have been augmented by the extreme mechanization and mobility of modern warfare, and institute careful yet quick appraisal of individual casualties which is required in expeditious triage and in the face of rapidly developing and kaleidoscopically changing situations.

CHANGES IN THE PROGRAM OF MEDICAL EDUCATION

In order to provide sufficient numbers of medical officers to meet the requirements for our continuously expanding armed forces, radical changes in the program of medical education have become necessary. Already two effective steps have been taken. The first of these has been directed toward the acceleration of the curriculums of medical schools to the fullest extent to which such a procedure can operate without imposing undue hardships on medical students or impairing the quality and thoroughness of medical education; this program is now well under way. The second step, which is just now being formulated in complete detail, is the plan for assuring the constant flow of students into medical schools and subsequently securing their formal medical education. This plan has recently been described by Brig. Gen. Joseph N. Dalton [2] and consists essentially in the establishment of an Army Specialized Training Division, one purpose of which is

1. Procuring Physicians, Dentists and Veterinarians in the Field, J. A. M. A. **122:** 181 (May 15) 1943.
2. Dalton, J. N.: Premedical and Medical Education as Related to the United States Army, J. A. M. A. **121:** 633 (Feb. 27) 1943.

to provide carefully selected enlisted men, under government contract, the accepted training in approved schools of medicine for granting them the degree of Doctor of Medicine. The preparatory collegiate training of these soldiers, which must be acceptable to the medical schools but must be concentrated and abbreviated to meet the present exigencies, will also be obtained at contracting institutions.

These departures from established educational schedules and customs pose several problems and contain implications which stimulate thought concerning the matter of trends in medical, as well as academic, education. Many phases of the future of specialized and liberal education have for some time past held a conspicuous position in the minds of national educators. That the need for such deviations must be appreciated and accepted in view of war demand, and indeed that it is recognized by educators, is evidenced by the remarks of President Dodds of Princeton University, who accepts the idea of a moratorium on liberal and humanistic studies and who concurs with the decision that young men with exceptional capability and talent should be "directed into channels in which their fullest capacity as scientists and technicians can be employed." At the same time, however, he has expressed the conviction that "the government is duty bound to do all it can to make sure that conversion to a war basis does not mean a death sentence to that part of our educational system not required in the war effort." That changes in our economic structure have already unfavorably influenced endowed institutions and are reasonably liable to cause even more critical effects which may force dependence on government subsidy understandably occasions great concern among educators.

That the mechanism whereby these modifications in the medical educational system necessitated by war should be carefully controlled and well integrated is evident from the reported readjustments already in effect in European countries. Except in England the status of medical education abroad has been subjected to radical reorganization. In Germany, early in 1939, it was considered necessary to effect drastic changes in the program of medical education and hospital training in order to meet the immediate and anticipated expanding needs of the highly militarized and the conquest aspiring Third Reich. Thus, in contrast with the established seven or eight year course of formal medical education which obtained in that country, the Germans considered it expedient not only to concentrate this program into a period of five years but also to add to the curriculum certain subjects deemed indispensable to prepare the graduates to meet fully their sociological duties under the new regimen. This program was extended further to embrace in the undergraduate curriculum the clinical training period in hospitals and thus eliminate internships. The undesirable abbreviations and substitutions entailed in this form of medical education will undoubtedly be followed by many repercussions, the most important of which is the consequent lowering of the standards of medical service. That circumstances affecting us might give rise to a situation approximating that which earlier confronted the Germans should be thoroughly realized. Accordingly, careful thought and deliberate consideration should be given the procedure of medical tutelage and the means of assuring its successful accomplishment without sacrificing unnecessarily the integrity of pedagogic background and clinical apprenticeship.

POSTGRADUATE MEDICAL EDUCATION

Postgraduate medical education as it has evolved to its present high level has already suffered a definite setback and faces further disorganization and recession because of the necessary disturbance in the resident system which constitutes the framework supporting postgraduate medical education. The urgent military need for recent medical graduates who would normally comprise the group from which residents are selected, and the necessary dislocation of those who have partially completed residencies, has inflicted a severe blow which has seriously impaired and temporarily disrupted the entire resident system and has shaken the very foundation of postgraduate medical education. Not only those residents who were called on to forfeit the remainder of their normal period of residency but also those who have been entirely deprived of an opportunity to obtain a residency have suffered by this disintegration of the resident system, and succeeding groups of medical graduates will surely feel its baneful influence until the present emergency shall have passed and postwar reconstruction accomplished. An attempt will be made to have the essential civilian resident positions filled by individuals who are not physically qualified for military service, or by women. Since, however, the majority of physically qualified medical graduates will enter military service immediately after the completion of a one year internship, it is planned that, as far as practicable, opportunities will be afforded in Army hospitals for subsequent training in specialized fields. Of interest in this connection is the fact that appropriate consideration of training and experience gained during military service will be given by the respective specialty boards. This will in some measure compensate for the deprivation of resident training which would have been obtained under peacetime conditions and will to a certain extent obviate the gap in the increasing supply of specially trained physicians. The extent to which this plan must be depended on in training individuals who have been partially or totally denied special training prior to entry into military service will, of course, be influenced by many factors, principal among which is the duration of the war.

INCREASED NEED FOR RESEARCH

That the continuance of medical research during the course of war is an essential function cannot reasonably be questioned. Indeed, the very occurrence of war greatly increases the need for research at an accelerated pace. Opportunities for certain types of research, particularly clinical investigations in traumatic lesions and epidemiologic diseases, are increased manyfold and, if they are accepted and developed, permit the accumulation of data and the formation of principles and practices which find widespread application not only in meeting the immediate exigencies of warfare but also in civilian needs and postwar purposes. The origin and development of surgery have been so intimately connected with and dependent on the experiences gained in war, and the entire field of preventive medicine owes so much of its present vigor to initial strength imparted to it by military endowment, that research must be carefully nurtured and constantly encouraged despite whatever obstacles arise to threaten its integrity and progress. Indeed, in England, where the effects of this war have been felt longer and more intensely, the significance of research has been considered so valuable that medical research sections have been established at home and abroad.

SOCIAL AND ECONOMIC TRENDS

The complex connotations and inevitable implications which have suddenly loomed on the entire medical scene as a result of the drastic changes necessarily associated with war have been magnified by the tremendously forceful socioeconomic trends which characterize our time and which have preceded and still accompany the present military conflict. What effect the war will eventually have in hurrying some and retarding other developments remains conjectural, but that mighty influences are at work to effect epochal changes in the complexion of medical practice is incontrovertible. As physicians we are so engrossed in our purely professional and scientific interests that we are prone to neglect our role in current socioeconomic developments. Indeed some (too many) of us have been reluctant, even hostile, toward accepting this responsibility which is so eagerly desired by certain nonmedical groups. Such an attitude is no longer tenable and would actually jeopardize our vital function and altruistic aims so aptly expressed in a recent editorial [3] in THE JOURNAL: "The provision of optimum health through the widest possible application of the principles of preventive medicine and the treatment of disease, and through the best possible distribution of medical services. . . ." We must face realistically the ineluctable trends in the national and international social and economic structure—trends directionally signaled by already established signposts such as "social security," "sick benefits," "unemployment insurance," "old age compensation" and various alphabetically captioned governmental agencies, and by recently lighted cressets such as certain postwar plans proposed by our government and other governments, which have already received much editorial comment. These and other widely discussed and intensively considered plans for cushioning the transitional shock from wartime to peacetime economy, and proposals for broadening the social security program and extending the nation's economic resources, merely delineate with increasing clarity the current trends in the nation's thoughts and ideas. That we are intimately involved and deeply concerned with these plans and proposals is clearly demonstrated by certain recommendations that the government, in cooperation with the medical profession, take action to enable the individual to budget medical expenses over a reasonable period and "contribute toward the costs of care according to his ability," and that federal aid be extended toward developing an adequate system of regional and local hospitals, maternal and child care and other measures to assure "adequate medical and health care for all, regardless of place of residence or income status." The elucidation of these proposals makes it quite apparent that the old system of medical practice will be considerably modified. Because of this, and the startling realization that the potentialities for both good and evil are so limitless and can be projected so far into the future of medicine both as a science and as an art, it becomes imperative in this transition period that the wise and tempered counsel of the medical profession exert its proper influence. There is some comfort and reassurance in the fact that our leaders are keenly aware of the significance and necessity for organization of medical services and participation in postwar planning.

It is becoming more and more apparent that the responsibilities in the sphere of medical practice during the coming year will be a matter of ever increasing concern to us and will demand a degree of attention and a measure of effort far beyond that of our predecessors. The perspective and sound judgment which must come from our ranks cannot be gained without an intense interest, thorough knowledge and deliberate action on the part of every one sincerely concerned with the medical security of our country. Each of us must become thoroughly acquainted with the challenges now confronting medicine, challenges which will undoubtedly be mulitplied when the current worldwide hostilities cease and the difficult reconstruction period begins. Our success in meeting these challenges will in large measure be determined and sharply delimited by the intelligence, perspicacity and zeal which we manifest in approaching and participating in the evolutionary process.

3. Planning for Postwar Medical Care, editorial, J. A. M. A. **121:** 130 (Jan. 9) 1943.

HISTOPLASMOSIS PRODUCING VEGETATIVE ENDOCARDITIS

REVIEW OF LITERATURE, WITH REPORT OF A CASE

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While studying the natives of Panama, Darling [1] was the first to describe histoplasmosis. This investigator, in fact, reasoned that a condition similar to Old World leishmaniasis should be found in this area, and as a result of these studies infection brought about by histoplasmosis was first recognized as a clinical syndrome. In 1906 Darling proposed the name "histoplasma capsulata"; however, in 1908 he used the term "histoplasma capsulatum." He reported 1 case of histoplasmosis in 1906 with autopsy findings. In 1908 he published reports of 3 cases with autopsy findings, which included the case he reported in 1906. Darling found enormous numbers of small ovoid and round bodies in the liver, spleen and lymph glands in each of these 3 cases. The majority of these bodies were intracellular and differed structurally from members of the genus Leishmania; that is, they did not contain a chromatin rod or blepharoplast. He proposed that the name Histoplasma capsulatum be applied to these small organisms. Two additional reports were made by him on these 3 original cases. According to him the essential pathologic feature of the syndrome was an invasion of the endothelial cells in various parts of the body.

Histoplasmosis was not recognized again until 1926. In that year Riley and Watson [2] reported the first instance of the disease in the United States proper. This case originated in Minnesota.

From the Section on Surgical Pathology, Mayo Clinic (Dr. Broders), and the Division of Medicine, Mayo Clinic (Drs. Herrell and Vaughn).

1. Darling, S. T.: A Protozoon General Infection Producing Pseudotubercles in the Lungs and Focal Necroses in the Liver, Spleen and Lymph Nodes, J. A. M. A. **46:** 1283-1285 (April 28) 1906; Histoplasmosis: A Fatal Infectious Disease Resembling Kala-Azar Found Among Natives of Tropical America, Arch. Int. Med. **2:** 107-123 (Sept.) 1908; The Morphology of the Parasite (Histoplasma Capsulatum) and the Lesions of Histoplasmosis, a Fatal Disease of Tropical America, J. Exper. Med. **11:** 515-531 (July) 1909.

2. Riley, W. A., and Watson, C. J.: Histoplasmosis of Darling with Report of a Case Originating in Minnesota, Am. J. Trop. Med. **6:** 271-282 (July) 1926.

Crumrine and Kessel [3] in 1931 noted both the intracellular and extracellular phases of the growth of Histoplasma capsulatum. They also noted budding of some parasites in the cellular phase. DeMonbreun,[4] however, was the first to grow the organism in vitro. The material used in his study was obtained from the blood of a 6 months old infant whose condition had been diagnosed as histoplasmosis on the basis of observation of the organisms in some of the large mononuclear cells in the blood. This case was reported by Dodd and Tompkins.[5] DeMonbreun observed that on culture mediums the yeastlike form of Histoplasma capsulatum gave rise to a typical fungous growth, with the production of mycelia and spores. He was further able to inoculate successfully both monkeys and mice with the fungous growth and to observe that the yeastlike structure of Histoplasma capsulatum was reproduced in the animal. In 1939 DeMonbreun [6] recovered the organisms from a dog and was able to reinfect puppies with Histoplasma capsulatum by feeding suitable preparations of the mycelial form.

Conant [7] in 1941 made a very comprehensive study of the life cycle of Histoplasma capsulatum and placed the organism in the group Moniliaceae of the fungi imperfecti. He thus recognized the fungous nature of the organism.

In reporting the fourth instance of the disease to be observed in the United States, Shaffer, Shaul and Mitchell [8] in 1939 observed the organisms in the reticuloendothelial cells of a large number of organs. This infection also occurred in an infant. The authors expressed the opinion that the disease was more common than was apparent at that time. Since 1939 the condition has been recognized more and more frequently, although little has been added to the clinical pathologic observations made by the earlier workers. Meleney [9] in 1940 reviewed the entire subject and collected 32 cases of the disease. He also mentioned 13 cases reports of which had not been published. Early in 1942 Hild [10] reported that the total number of cases reports of which had been published was 37. Seven of the 37 patients were infants less than 15 months of age.

Humphrey [11] has pointed out that splenomegaly is the most constant result of infection due to histoplasmosis. Splenomegaly is later followed by the occurrence of small nodules in the lungs, liver and spleen. These nodules represent collections of reticuloendothelial cells containing Histoplasma capsulatum. These nodules are essentially granulomas. Henderson, Pinkerton and Moore,[12] as well as Brown, Havens and Magath,[13] stressed the point that the adrenal body is particularly susceptible to the infection. Henderson, Pinkerton and Moore further emphasized the importance of examination of the stool for the parasite in the presence of any type of undiagnosed enteritis. Reid, Scherer and Irving [14] believed that sternal puncture may be useful in establishment of the diagnosis. Biopsy of a specimen obtained from enlarged lymph glands may be helpful in establishing the diagnosis.

The clinical course of the disease syndrome resulting from infection due to histoplasmosis mimics any severe systemic infection. To date the disease has been universally fatal. Severe anemia, leukopenia and splenomegaly usually are observed. Various organ systems, but particularly the gastrointestinal tract, may be involved. Lesions of the nasopharynx and throat often are present. Generalized or localized abscesses or ulcers of the skin may occur. Histoplasmosis also may give rise to chronic pulmonary infection. Asthenia and anorexia with severe loss of weight are not uncommon.

At the time of this review there was no recorded instance of involvement of the heart valves (vegetative endocarditis) due to the organism Histoplasma capsulatum. Such a condition has been observed and forms the basis for this report.

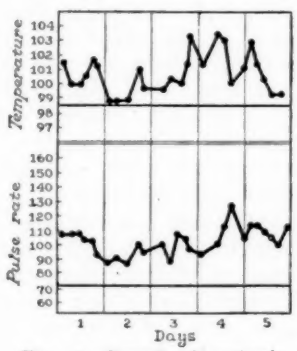

Fig. 1.—Record of patient's temperature and pulse rate to the sixth day of hospitalization.

REPORT OF CASE

A white man aged 47, American born, first presented himself at the Mayo Clinic for examination on Nov. 27, 1941 complaining chiefly of unexplained fever of four months' duration. He had enjoyed excellent health during most of his life except for an attack of scarlet fever in his youth. Six months before his admission he had suffered from a peritonsillar abscess. This had been opened surgically, and his recovery was uneventful. Four months before he was admitted he had been awakened by a dull, bandlike pain across the lower part of the abdomen which simulated the sensation caused by a distended bladder. He voided with some relief, but the pain continued for two days, extending gradually up to the right costal margin. At that time a diagnosis of disease of the gallbladder had been made, and the patient was hospitalized because of a temperature of 103 F. His treatment had consisted of hot compresses applied to the abdomen. The next day the symptoms had subsided and he returned to work within a few days. A week later he became ill again and the illness was characterized by prostration and a febrile reaction with a daily temperature as high as 102 F. Subsequent to this he had experienced generalized malaise with recurrent episodes of hyperpyrexia.

Complete laboratory studies carried out by his local physician resulted in no definite findings, although a presumptive diagnosis of "endocarditis" was made. At the time of his admission the patient's temperature was normal, although it ranged between 103 F. and normal for the next six days after his admission (fig. 1). His weight was 145 pounds (about 66 Kg.), which represented a loss of approximately 35 pounds (16 Kg). in four months' time. He did not appear to be acutely ill. Results of examination of the head, nose and throat were essentially negative, except for some evidence of gingivitis and a few injected portions in the lower lip. Results of examination of the thorax were negative. Examination of the heart disclosed tachycardia and a soft systolic murmur which could be heard over the precordium. Examination of the abdomen revealed some degree of tenderness in the left upper quadrant.

3. Crumrine, R. M., and Kessel, J. F.: Histoplasmosis (Darling) Without Splenomegaly, Am. J. Trop. Med. **11**: 435-449 (Nov.) 1931.
4. DeMonbreun, W. A.: The Cultivation and Cultural Characteristics of Darling's Histoplasma Capsulatum, Am. J. Trop. Med. **14**: 93-125 (March) 1934.
5. Dodd, Katharine, and Tompkins, Edna H.: A Case of Histoplasmosis of Darling in an Infant, Am. J. Trop. Med. **14**: 127-137 (March) 1934.
6. DeMonbreun, W. A.: The Dog as a Natural Host for Histoplasma Capsulatum: Report of a Case of Histoplasmosis in This Animal, Am. J. Trop. Med. **19**: 565-587 (Nov.) 1939.
7. Conant, N. F.: A Cultural Study of the Life Cycle of Histoplasma Capsulatum Darling 1906, J. Bact. **41**: 563-579 (May) 1941.
8. Shaffer, F. J.; Shaul, J. F., and Mitchell, R. H.: Histoplasmosis of Darling: Fourth Case to be Reported in the United States, J. A. M. A. **113**: 484-488 (Aug. 5) 1939.
9. Meleney, H. E.: Histoplasmosis (Reticuloendothelial Cytomycosis): A Review with Mention of Thirteen Unpublished Cases, Am. J. Trop. Med. **20**: 603-616 (July) 1940.
10. Hild, J. R.: Histoplasmosis in Infancy, Am. J. Dis. Child. **63**: 131-139 (Jan.) 1942.
11. Humphrey, A. A.: Reticuloendothelial Cytomycosis (Histoplasmosis of Darling), Arch. Int. Med. **65**: 902-918 (May) 1940.
12. Henderson, R. G.; Pinkerton, Henry, and Moore, L. T.: Histoplasma Capsulatum as a Cause of Chronic Ulcerative Enteritis, J. A. M. A. **118**: 885-889 (March 14) 1942.
13. Brown, A. E.; Havens, F. Z., and Magath, T. B.: Histoplasmosis: Report of Case, Proc. Staff Meet., Mayo Clin. **15**: 812-816 (Dec. 18) 1940.
14. Reid, J. D.; Scherer, J. H., and Irving, H.: Systematic Histoplasmosis in the United States, Science **91**: 264 (March 15) 1940.

The liver was palpable. Results of the rest of the physical examination were negative.

Repeated urinalysis disclosed a slight amount of albumin, the persistence of a few granular casts, occasional erythrocytes and occasional pus cells. The value for hemoglobin was 11.7 Gm. per hundred cubic centimeters, and erythrocytes numbered 4,180,000. The leukocyte count was never higher than 6,900. Differential counts and special blood smears disclosed only a definite shift to the left of the polymorphonuclear leukocytes and some myeloid immaturity. The Wassermann reaction was negative. Roentgenograms of the thorax revealed nothing abnormal. The sedimentation rate was 52 mm. per hour. Results of five blood cultures were reported as being negative. Results of complete examination of the sputum were negative. Results of examination of the stools for parasites were negative. Results of agglutination tests for Brucella melitensis, Pasteurella tularensis, Eberthella typhosa and X19 strains of Proteus vulgaris all were negative. The tuberculin test was negative. Results of examination of a thick smear

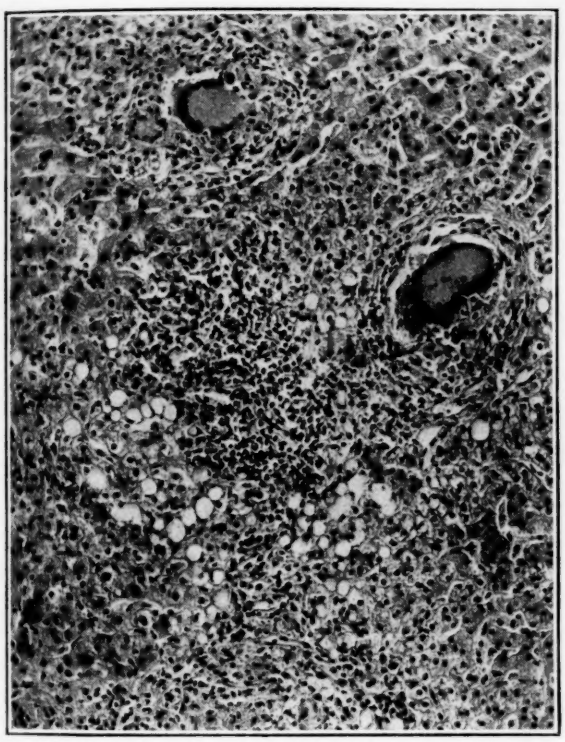

Fig. 2.—Section of tissue of liver removed for biopsy. Chronic granuloma (hematoxylin and eosin, × 110).

of the blood for any evidence of plasmodia were negative. A test for hepatic function revealed retention of dye of grade 2.

Because of the heart murmur and the recurrent febrile reactions, a diagnosis of "subacute bacterial endocarditis" was entertained, although, because of the negative blood cultures, this diagnosis was never considered to be the final one. In view of the palpable liver, the finding of retention of dye of grade 2 and the history of abdominal colicky pain which extended to the right upper quadrant, it was thought wise to perform peritoneoscopy and abdominal surgical exploration to exclude the possibility of primary or secondary hepatic disease. On December 4 Dr. J. M. Waugh of the Division of Surgery carried out abdominal exploration. Enlargement of the liver was found and seemed to be fairly well confined to the right lobe. The colon, appendix, stomach, duodenum, pancreas and aortic lymph nodes were all normal. The spleen was definitely enlarged. There was nothing to suggest a hepatic abscess, and although aspiration biopsy of the right lobe of the liver was carried out three times no fluid was encountered. Because of an unusual brownish discoloration, almost of a nutmeg type, specimens of tissue of the liver were taken for biopsy. The operation was terminated as a simple exploration.

After careful microscopic study of the sections obtained from the liver, one of us (Broders) felt that this material represented a chronic granuloma with multiple small zones of necrosis associated with scattered foreign body giant cells. In the small zones of necrosis were microscopic organisms which

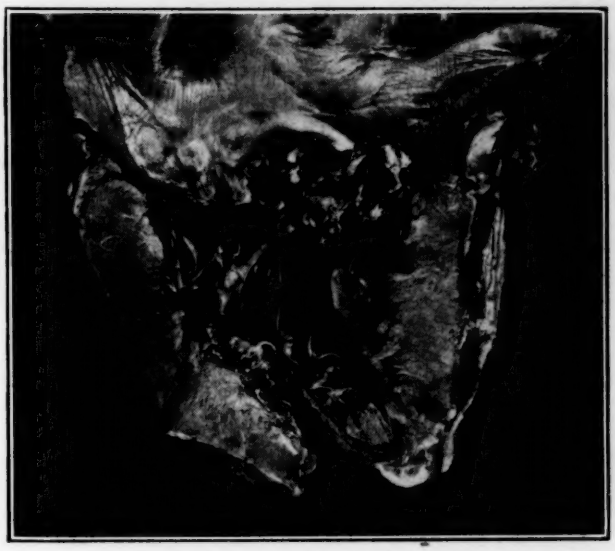

Fig. 3.—Heart, opened, to show large vegetation on mitral valve.

to him resembled the causative organism of histoplasmosis (fig. 2).

The patient's postoperative course was relatively uneventful. Before the pathologic diagnosis had been received we administered hypodermically to the patient 1 grain (0.065 Gm.) of

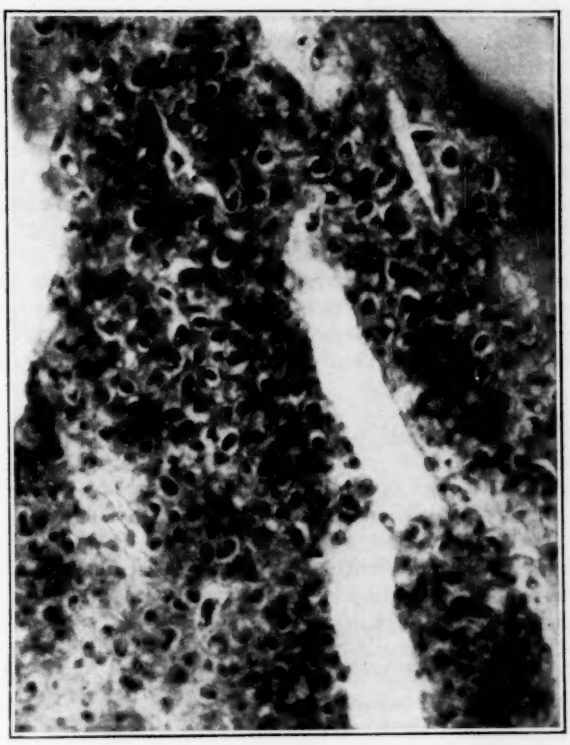

Fig. 4.—Vegetation on the aortic valve, showing colonies of Histoplasma capsulatum (vegetation on the mitral valve presented an identical picture) (hematoxylin and eosin, × 1,100).

emetine three times daily for three days. Interestingly enough, the patient's temperature during the time he was receiving emetine was never higher than 99 F. After the pathologic diagnosis of histoplasmosis had been arrived at, on the basis of biopsy of specimens of the liver, no further antiamebic

therapy was employed. Aside from supportive treatment and general measures for the patient's comfort, no attempt at specific therapy was made. Fourteen days after the abdominal surgical exploration he was dismissed from the hospital and allowed to return home. After his return home he received a course of antimony and potassium tartrate in amounts of 5 cc. of a 1 per cent solution. This amount was administered daily for a trial period of six or eight days. All attempts at therapy were without avail, and the patient died eleven weeks after his dismissal from the clinic.

PATHOLOGIC DATA

The results of necropsy, reported through the courtesy of Dr. Paul Bertrand Champlin of Enid, Okla., revealed definite endocarditis of the mitral valve as well as a small warty lesion on the aortic valve (fig. 3). The only other observation of significance was one infarct in the spleen. The other abdominal viscera were essentially normal. The observations were again suggestive that the fatal termination of the patient's illness was accompanied by subacute bacterial endocarditis with the usual associated findings.

Special studies of the pathologic tissue were made by one of the sections on pathology. Extensive, organized vegetation on the mitral valve of the heart covered approximately a fifth of the surface of the valve. The vegetation extended on the chordae tendineae, and inextensive vegetation was seen on the free edge of one of the aortic cusps. Histologically there was definite evidence of old rheumatic fever both in the myocardium and at the base of the valves. Enmeshed in the vegetations were myriads of a yeastlike organism having the typical appearance of Histoplasma capsulatum (fig. 4). Examination of the spleen revealed an old healed infarct. An occasional Histoplasma capsulatum was demonstrable in the reticuloendothelial cells of this organ. Examination of the kidneys disclosed a moderate amount of arteriolar sclerosis, with an occasional zone of a granulomatous nature in the cortex. These zones were composed of inflammatory cells and foreign body giant cells. Although Histoplasma capsulatum could not be demonstrated after special staining, these zones nevertheless were suggestively involved by the organism. Study of a portion of the liver obtained at necropsy revealed nothing but chronic passive congestion. In the specimens of tissue of the liver previously taken for biopsy, however, Histoplasma capsulatum could be demonstrated in the granulomatous zones.

COMMENT

From a clinical point of view this case represents primarily another example of the problem of recurrent hyperpyrexia of obscure origin. The patient had never suffered from rheumatic fever, although he had had scarlet fever in his youth as well as "growing pains" as a child. The clinical course, together with the physical findings, was highly suggestive of subacute bacterial endocarditis. Repeated blood cultures were negative, a fact which resulted in our attempt to establish the definite diagnosis by simple abdominal exploration. The finding of Histoplasma capsulatum by means of biopsy of tissue obtained from the liver was extremely valuable. There is little doubt that the patient was suffering from what appears to have been one of the few instances of systemic infection due to histoplasmosis. What part the preceding peritonsillar abscess played in the onset of the patient's illness cannot be definitely stated. It seems reasonable to assume, however, that this may have been the initial lesion. The subsequent course, as well as the pathologic data, which included an old rheumatic heart lesion and also the unusual finding of this organism in the vegetative process in the heart, renders this case a rather unusual clinical and pathologic entity. It appears to be the first case of its kind noted in the literature. As knowledge of the organism of infection increases, opportunity to observe similar instances of the disease may be afforded.

SUMMARY

In a case presenting the clinical syndrome characteristic of vegetative endocarditis in which the causative organism was Histoplasma capsulatum, the clinical course, laboratory and physical findings were identical to those which accompany subacute bacterial endocarditis. The illness terminated fatally, in spite of attempts at therapy. This appears to be the first case of its kind recorded in the literature.

THE SELECTIVE ACTION OF THIOBISMOL ON INDUCED MALARIA

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AND
ROY G. SMARR, M.D.
COLUMBIA, S. C.

One of the problems of the malarial therapy of neurosyphilis has been the need of a drug to reduce the frequency of the paroxysms without eliminating them altogether. Until recently no drug, including the common antimalarials, has demonstrated a reliable selective effect, the administration of the drug causing either no change or a total suppression of the paroxysms. In 1939 Schwartz [1] found that thiobismol (sodium bismuth thioglycollate) would convert Plasmodium vivax paroxysms from a quotidian (daily) periodicity to a tertian (alternate days) periodicity. Subsequently other workers [2] confirmed this observation. However, the age (measured in the number of hours from the last fever peak) at which parasites are affected and therefore the best time to administer the drug have not been definitely established.

The present investigation was undertaken with a twofold purpose: (1) to determine at what age the parasites are affected by thiobismol and consequently the optimum time of administration and (2) to find whether species of malaria other than P. vivax can be controlled similarly.

PROCEDURE

The drug was tested on the strains of malaria which are employed at the South Carolina State Hospital for the treatment of neurosyphilis. Our method of inducing and handling this malaria has been described elsewhere.[3]

The drug was administered intramuscularly in amounts of from 0.05 to 0.2 Gm. Frequency of administration and amounts of drug given are discussed later. The observations reported herein cover a two year period.

From the National Institute of Health, Malaria Investigations, Malaria Research Laboratory, United States Public Health Service (Dr. Young), and the South Carolina State Hospital (Drs. McLendon and Smarr).

1. Schwartz, W. F.: The Effect of Thiobismol on Therapeutic Malaria, J. Pharmacol. & Exper. Therap. **65**: 175-184 (Feb.) 1939.
2. Brunsting, L. A., and Love, W. R.: The Tempering Effect of Sodium Bismuth Thioglycollate (Thiobismol) on Therapeutic Malaria, Proc. Staff Meet., Mayo Clin. **15**: 285-288 (May 1) 1940. Cole, H. N.; DeOreo, G. A.; Driver, J. R.; Johnson, H. H., and Schwartz, W. F.: Use of Bismuth Injections to Manage Course of Therapeutic Malaria, J. A. M. A. **115**: 422-426 (Aug. 10) 1940.
3. Mayne, Bruce, and Young, M. D.: The Technic of Induced Malaria as Used in the South Carolina State Hospital, Ven. Dis. Information **22**: 271-276 (Aug.) 1941.

OBSERVATIONS

Plasmodium Vivax.—As with other strains of vivax malaria, our strain (St. Elizabeths) often shows multiple broods of parasites, producing quotidian paroxysms. To prevent the patient from weakening unduly, it is desirable to have the paroxysms occur every other day. Therefore thiobismol was tried.

A total of 13 white patients were given one or more doses of thiobismol. The results are presented in the accompanying table.

One patient (J. L. H.) with two broods of parasites was given 0.05 Gm. of thiobismol. This dosage had no effect on the paroxysms, and the dosages thereafter were increased.

The table shows that an injection of 0.1 or 0.2 Gm. of thiobismol given sixteen to twenty-eight hours after a fever peak (column 3) prevented recurrences of the paroxysms caused by that brood of parasites. When the drug was given at the other hours indicated (column 4) either the paroxysms were not affected or the effect was desultory.

The chart (temperature chart of patient W. V.) shows a typical reaction. The 17 hour old group ceased to produce paroxysms; the 41 hour old group continued to produce them.

In 2 instances, more than one injection of the drug was given at forty-eight hour intervals: patient J. L. H. received two injections and patient D. J. B. received three. However, no advantage was obtained from multiple injections that was not realized from a single injection.

To determine whether the number of broods of parasites influenced the action of the drug, patients with both single and double broods were tested. Patient T. B. S. with only one brood of parasites producing paroxysms every other day (tertian) received one injection of 0.2 Gm. at the height of a paroxysm. The paroxysm recurred every other day thereafter, as would have been expected if no drug had been given, showing that the drug had no effect. About two weeks later another 0.2 Gm. injection was given the patient at the height of a fever with the same results as before. However, when there was only one brood of parasites and the drug was given when they were about half grown, future paroxysms were prevented. In patients with multiple broods (H. B. and L. H. in the table), only the brood about half grown was affected. The foregoing results indicated that the number of broods present did not influence the action of the drug but that the main factor was the age of the parasites.

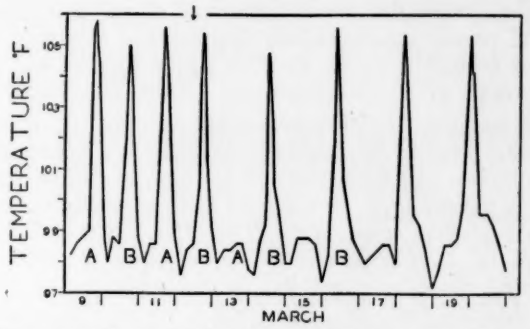
Effect of Thiobismol on the Different Age Groups of Plasmodium Vivax Parasites

Patient	Thiobismol Administered, Gm.	Age of Parasite Broods *	
		Paroxysms Inhibited	Paroxysms Not Inhibited
T. B. S.	0.2	..	2
T. B. S.	0.2	..	0-1
L. W.	0.2	22	45
R. W.	0.2	28	5
D. B. J.	0.1 (thrice)†	24	48-0
J. L. H.	0.1 (twice)†	24	46
H. B.	0.1	19	37
L. H.	0.1	23	46
C. R. B.	0.1	20	45
J. A. B.	0.1	16	42
W. V.	0.1	17	41
N. L. M.	0.1	17	45
L. P.	0.1	..	30‡
G. O. G.	0.1	..	12 + 36‡
J. L. H.	0.05	..	26 and 48

* Age is given as the number of hours from last fever peak caused by that brood of parasites to the time of drug administration.

† Drug given at forty-eight hour intervals.

‡ Results desultory. Usually were given several days' rest, then paroxysms returned as formerly.



Temperature chart of patient W. V., showing the conversion of paroxysms from a quotidian to a tertian periodicity by one injection of 0.1 Gm. of thiobismol (indicated by arrow). The drug was given seventeen hours after the last paroxysm caused by parasite brood A and forty-one hours after the paroxysm by parasite brood B. The A paroxysms were eliminated and the B paroxysms continued.

The parasitologic picture coincided with the clinical picture. When the drug was given at the peak of the paroxysm in a single brood infection (tertian) the parasite density was not materially changed (patient T. B. S.). However, when two broods were present the parasites that were half grown decreased in number and, although the other brood was not affected, the total parasite count dropped considerably. When only one brood of parasites was present and thiobismol was given when these were half grown, the parasite density dropped sharply and, although a few parasites might still be found in the blood stream, the paroxysms usually ceased.

By examining the blood smears at four hour intervals one could see the effects of the thiobismol on the half grown parasites. Within four hours after administration shrunken, fragmentary and irregular staining parasites were found, as well as parasites free from the erythrocytes. Correlating the parasites according to size and age groups revealed that the half grown parasites diminished in number sharply in the twelve hours following drug administration. This observation correlates with the foregoing parasitologic and clinical findings. However, it must be pointed out that although thiobismol seemed to act to some extent directly on the parasite, as demonstrated by the degenerative changes just mentioned, the degree of this action does not seem to be extensive enough to account for all the decrease in the brood affected. There appears to be some other influence as well, and the clarification of the exact action of thiobismol against the parasites needs further investigation.

Plasmodium Malariae.—Because of several favorable characteristics, quartan malaria is being widely used in the treatment of neurosyphilis. Occasionally, but much less frequently than with P. vivax, multiple broods of parasites appear, causing paroxysms oftener than every seventy-two hours. Since such a condition is usually undesirable, thiobismol was tried on this strain (United States Public Health Service) of P. malariae to see whether some of the broods of parasites could be eliminated.

Thiobismol in 0.1 and 0.2 Gm. amounts was given thirty-seven times to 9 Negroes showing either one, two or three broods of parasites. Fifty-three broods of parasites in thirty-three age groups ranging from two to seventy-two hours after the fever peak were involved, so that practically every age group was covered.

No consistent results were obtained. Usually the parasite density decreased for several days. Sometimes several paroxysms would be skipped, but this was not always true. In short, clearcut action against various age groups of P. malariae could not be demonstrated.

Plasmodium Falciparum.—Occasionally a neurosyphilitic patient is immune to both P. vivax and P. malariae. In such cases P. falciparum can be used, but the patient must be watched most carefully because of its malignant character. Therefore we tested thiobismol on P. falciparum to see whether it could be rendered more manageable. The P. falciparum used was obtained Oct. 16, 1940 from a young Negro male who was admitted to the hospital suffering from malaria and is hereby designated as the McLendon strain. Since the isolation of the McLendon strain of P. falciparum it has been used continuously for the treatment of neurosyphilis.

Nine Negro patients received thirteen injections of the drug; ten of these injections were of 0.2 Gm. and three were of 0.1 Gm.

No remission of the paroxysms could be demonstrated. The parasite density apparently was not altered by the drug. Of the three species, P. falciparum showed the least response to the drug.

COMMENT

Thiobismol in 0.1 and 0.2 Gm. amounts exhibited a definite inhibitory effect on half-grown P. vivax parasites, i. e. about sixteen to twenty-eight hours after a paroxysm caused by that group of parasites. (As the peak of the fever follows the peak of the parasite segmentation by several hours, the actual age of the parasites was several hours greater than the elapsed time from the fever peak.)

The thiobismol did not exert much effect on parasites either younger or older than the sixteen to twenty-eight hour limits. When two broods of parasites were present producing quotidian paroxysms, an injection of thiobismol eliminated the brood about half grown, leaving the other brood to continue producing paroxysms every other day. This tertian periodicity of paroxysms usually persisted throughout the remainder of the infection and in some cases through several subsequent transfers.

It it possible, therefore, to change quotidian paroxysms of P. vivax to tertian by giving 0.1 or 0.2 Gm. of thiobismol, preferably the former amount, about twenty-four hours before or after the paroxysms to be eliminated. A convenient time to administer the drug is at the fever peak. The quotidian occurrence of paroxysms often taxes the patient so severely that it is impossible for him to undergo a full course of twenty paroxysms. Changing the paroxysms to a tertian occurrence better enables the patient to withstand a full course of malaria. The selective property of thiobismol is of much value in the control of malaria and is a characteristic that so far has not been demonstrated by the commonly used antimalarials such as quinine.

In our work on P. malariae, a selective effect of thiobismol on different age broods of the parasites has not been demonstrated. Usually there was a decrease in parasite numbers following administration.

Against P. falciparum, thiobismol seems to have almost no inhibitory effect.

We are not able at present to offer any satisfactory explanation for this difference in the action of thiobismol on the three species of malaria.

Quite often quinine will not prevent the occurrence of paroxysms for several days after it has been started. It has been found useful here in terminating a vivax infection to give an injection of thiobismol the day on which quinine is started. The thiobismol will usually prevent the occurrence of a paroxysm the following day. After that the quinine controls the infection.

This combination of thiobismol and quinine might be found useful in malaria infections generally.

SUMMARY AND CONCLUSIONS

1. Thiobismol in 0.1 or 0.2 Gm. amounts was found to have an inhibitory effect against P. vivax parasites which were half grown, i. e., about sixteen to twenty-eight hours after the last paroxysm caused by that brood of parasites. Parasites older or younger were not affected.

2. On examination of the blood, thiobismol seemed to injure the half grown parasites and to reduce their numbers (density). No such effect was seen when parasites were older or younger.

3. By giving the drug during the sixteen to twenty-eight hour period after a paroxysm, that series of paroxysms was eliminated. Thus paroxysms were converted from quotidian to tertian periodicity.

4. Paroxysms converted to tertian periodicity usually remained so during the remainder of the infection and sometimes through several subinoculations.

5. The occurrence of paroxysms every other day (tertian) instead of daily (quotidian) enables a neurosyphilitic patient better to undergo a full course of malaria therapy.

6. In P. malariae infections, a definite action of thiobismol against any particular age group of the parasites could not be demonstrated. The administration of the drug sometimes gave temporary rest and a transitory diminution of parasites.

7. Practically no effect of thiobismol could be demonstrated against P. falciparum infections. Neither the course of the paroxysms nor the parasite density was considerably altered by the administration of the drug.

8. For the termination of P. vivax infections it has been found that one injection of thiobismol given the day quinine is started usually acts quicker than quinine alone by preventing a paroxysm the following day. It is suggested that this combination might find a wider use generally.

The Need for Oxygen During a High Parachute Jump.—The time of survival without oxygen has been estimated for various altitudes. At 40,000 feet a man would have one minute before he became unconscious; at 35,000 feet he would have three minutes, while at 20,000 feet he may last fifteen minutes. These facts illustrate the need for oxygen during a parachute jump from high altitudes. If a man should jump out of his plane at 40,000 feet and pull the rip cord, he would descend at the rate of 1,500 feet per minute. It would take him ten minutes to reach 25,000 feet and he would be dead from anoxia as a result.—Gemmill, Chalmers, L.: Physiology in Aviation, Springfield, Ill., Charles C Thomas, Publisher, 1943.

SULFADIAZINE IN RESPIRATORY TRACT INFECTIONS

ITS VALUE IN TREATMENT DURING WINTER OF 1942-1943 AT JEFFERSON BARRACKS, MISSOURI

LIEUTENANT COLONEL HOWARD A. RUSK
AND
CAPTAIN ARIE C. VAN RAVENSWAAY
MEDICAL CORPS, ARMY OF THE UNITED STATES

While it seems well established, both on a clinical basis and from the present concept of the mode of action of the sulfonamide drugs, that these drugs have no effect on virus infections, they are nevertheless being widely used in the treatment of such conditions as the common cold, influenza and atypical pneumonia symptom complexes which are difficult to evaluate clinically from a causative standpoint because of lack of simple laboratory diagnostic procedures but which in most instances are considered to be caused by virus infections.

Such use of the sulfonamide drugs is based on several premises: the prevention of secondary bacterial infections, the danger of withholding treatment in cases of pneumonitis caused by unrecognized sulfonamide sensitive bacterial infections, and possibly chiefly because the American physician has become extremely sulfonamide conscious and, as newer and less toxic forms have been devised, has become less hesitant in the use of these substances. In obscure cases, perhaps, he relies on them with the same feeling that his grandfather had toward quinine.

Because of the large number of respiratory tract infections which are seen in a large army station hospital under conditions which make possible a more carefully controlled clinical study than is possible in civilian life, three comparable and controlled series of patients with respiratory tract infections with fever and malaise sufficient to warrant hospitalization were studied during the winter of 1942-1943. The accompanying table illustrates the results obtained.

In each of the three series, the patients admitted to one or more wards were treated with sulfadiazine, an initial dose of 3 Gm. and subsequent doses of 1 Gm. every four hours being given and the latter being continued until convalescence was established or until non-improvement in protracted cases indicated that it should be stopped. The average total dose given was 25 Gm. Those admitted to other and similar wards were given A. P. C. capsules [1] every four hours. In addition, both groups of patients were given the usual supplementary therapy consisting of adequate fluids by mouth, gargles, intranasal medication, cough mixtures and steam inhalations as indicated. Patients with typical follicular tonsillitis were excluded and transferred to other wards. Chest plates were taken of all patients on the third day of hospitalization and at other times as conditions suggested. All patients developing x-ray evidence of pneumonia were excluded from the series.

There was no appreciable difference in the number of cases of pneumonia appearing in the wards in which sulfadiazine was given as compared with the control wards. The percentage in the former was 14 and in the latter 16. It should be emphasized that probably the majority of cases of pneumonia were in the incubation period at the time of admission and that this is not considered a test of prophylaxis. Patients with obvious pneumonia were sent directly to special pneumonia wards on admission, and while etiologic studies were rendered difficult in the group receiving sulfadiazine, it seems probable, on the basis of x-ray and laboratory evidence and sputum studies in the control group, that the bulk of these cases of pneumonia were of the atypical variety.

The patients included in the study, after those in whom pneumonia developed are eliminated, were kept hospitalized for a minimum postfebrile period of seventy-two hours, or longer if troublesome symptoms persisted. Routine urinalysis and complete blood counts were done on all patients. In the series of cases studied there were no reactions from sulfadiazine therapy aside from a few instances of slight nausea.

Comparable Results Obtained in Treatments of Respiratory Tract Infections

Series	Ward	Treatment	Number of Cases	Percentage Developing Pneumonia	Average Days of Fever	Average Days in Hospital	Percentage of Cases in Which Fever Persisted After 48 Hrs.
1							
11/17/42	21	Sulfadiazine	46	15	3.2	7.0	..
to							
12/ 2/42	22	A. P. C.	60	9	4.1	8.8	..
2							
12/ 7/42	22	Sulfadiazine	59	9	2.4	6.5	..
to							
12/30/42	14	A. P. C.	72	13	2.4	6.7	..
3							
1/12/43	14	Sulfadiazine	105	16	2.7	6.9	58
to	*17	Sulfadiazine	107	16	2.5	8.1	67
2/ 2/43	15	A. P. C.	100	19	2.8	7.2	54
	16	A. P. C.	82	14	3.3	7.3	52
4							
12/ 7/42							
to	15	Dover's powder	39	30	4.4	8.9	..
12/20/42							
Summary for sulfadiazine group			317	15	2.7	7.2	..
Summary for A. P. C. group.....			314	14	3.1	7.4	..

A study of the table will reveal indications of variation in virulence of the infectious process when series of cases studied at different times during the winter are compared. Sixty patients in November 1942 receiving A. P. C. capsules had an average hospital febrile period of 4.1 days, while 72 similarly treated patients in December 1942 had a comparable febrile period of 2.4 days. Comparison of the groups receiving sulfadiazine with the control groups revealed no significant difference in favor of the former.

A third small group of patients were given 5 grain tablets of Dover's powder (powder of ipecac and opium), 1 tablet every four hours. The clinical results were so poor and obstipation so troublesome that this treatment was soon discontinued. The results in this small group are also indicated in the table.

Since no deaths occurred in the series, either directly or from complications, and since there was no appreciable difference in the complications which did appear in the two groups (atypical pneumonia), the cost factor may properly be considered. Assuming a purely arbitrary number of 100 new hospital cases of respiratory

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The medical officers who conducted these studies in their wards were Capts. Willard B. Andrus and Carl D. Marsh and Lieuts. Francis X. Tamisiea, Alexander D. Robertson and Ames R. Templeton, all of the Medical Corps at the Station Hospital, Jefferson Barracks, Mo.

1. A. P. C. capsules contain aspirin 3½ grains (acetylsalicylic acid 0.2 Gm.), phenacetin 2½ grains (acetophenetidin 0.16 Gm.) and citrated caffeine ½ grain (0.032 Gm.).

tract infections daily, treatment with sulfadiazine on the basis of 75 cents for 25 Gm. would cost $2,250 a month, while A. P. C. capsules, on a basis of 4 cents for 20 capsules, would give a comparable figure of $120 a month. The differential in civilian life would obviously be much greater.

CONCLUSION

In a clinically controlled series of 670 cases of simple respiratory tract infections there was no significant difference, either in the length of the febrile period or in the period of hospitalization, among the group receiving sulfadiazine as compared with the control group receiving symptomatic treatment.

Clinical Notes, Suggestions and New Instruments

BROMIDISM AFTER EXCESSIVE DOSAGE OF PROSTIGMINE BROMIDE FOR MYASTHENIA GRAVIS

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The quantity of bromide which can safely be ingested by different persons varies enormously. The variability seems to depend not only on the differences with which various persons retain bromide but on the different concentrations of bromide which cause clinical symptoms of bromidism in different persons. For two reasons, therefore, it is necessary for the clinician to guard against bromide intoxication even in instances in which the bromine forms a relatively small portion of the bromide molecule prescribed.

Since the advent of prostigmine bromide as a means of administering prostigmine orally in the treatment of myasthenia gravis, patients with this disease have had a means of steadier relief from symptoms in addition to obviating the necessity for numerous hypodermic injections of prostigmine methylsulfate. The case here reported, however, shows a possible danger through bromidism in the self administration of prostigmine bromide—a danger which one would hardly anticipate and one of which I have been unable to find any previous record.

Recently a patient was received for treatment of myasthenia gravis after she had herself increased her dosage of prostigmine bromide to a point generally considered dangerous, but the danger arose from the bromide portion of the molecule instead of from the prostigmine portion. She had taken 30 mg. every three hours day and night for months. To her symptoms of myasthenia gravis were added those of bromide intoxication —mental confusion and paranoid symptoms—as well as the physical sign of thickness of speech. As the last named symptom is common to bromidism and myasthenia gravis, the remedy prostigmine bromide may greatly add to the symptoms of the disease being treated.

REPORT OF CASE

Myasthenia gravis; successful treatment with prostigmine bromide; excessive dosage self administered; bromidism; death.

Mrs. W. J. O., a white woman aged 32 with an irrelevant history of past illnesses, considered herself well up to March 1941, at which time she had an acute illness diagnosed as streptococcic sore throat. The organism was said to have been isolated and the patient was treated with sulfanilamide. After an apparent immediate recovery she had a relapse in a week or ten days. A second course of treatment with the same drug brought about a complete recovery.

She remained well until September, when she began to have episodes of "talking through her nose." This symptom was considered a sort of complication of her previous trouble.

At Christmas an illness diagnosed as influenza developed, and since that time, she said, she had never been well. In another month, by January 1942, her arms were so weak that she had difficulty in washing her hair. By March she had difficulty in chewing, swallowing and talking after midafternoon, though she had no trouble early in the day. It was more difficult for her to swallow solid food than liquids; she seemed to lack strength to force food through the esophagus.

In July diplopia developed, first noticed while she was driving her car. By that time she had to confine all her activities to the forenoon. Then, just as she was becoming incapacitated, she had a remission with disappearance of all her symptoms.

After a remission of several weeks her symptoms suddenly returned and she consulted a neurologist who, as part of the examination, gave her an injection of prostigmine methylsulfate, which removed all her symptoms in fifteen minutes. However, her joy was short lived, because he told her that what he had done was only by way of a test and that inevitably she would die of her disease within a year. He prescribed prostigmine bromide to be taken by mouth, and she got along quite well for a few months.

When I saw her she presented typical myasthenia gravis. She was too weak to reach over her head and she could not depend sufficiently on her grip to hold dishes, of which she had broken many. She had an almost constant ptosis and anisocoria and she fatigued very rapidly in general on exertion. The reflexes diminished in less than one minute on repeated testing. The thyroid was not palpable and x-ray examination showed no evidence of enlarged thymus. The heart and lungs were normal. The blood pressure was 118 systolic and 90 diastolic. The pulse rate was 72 a minute. There were no pathologic reflexes anywhere.

To remove the emotional depression due to a hopeless prognosis, I assured her (with her husband's collaboration and understanding) that her illness was no longer serious because of new facts recently discovered. With her new hope she returned home, taking 90 mg. of prostigmine bromide daily, and she did remarkably well for a few months.

I saw nothing more of the patient, who lived in another city, until Feb. 11, 1943, when she was admitted to a sanatorium in Los Angeles because of mental confusion. Examination there showed decided thickness of speech and other signs of myasthenia gravis but also disorientation and unwillingness to accept any advice. She demanded her discharge, was suspicious of the food served and was unapproachable by any argument. She evidently had a paranoid psychosis.

Because of the altered clinical picture and because the patient had brought a large supply of prostigmine bromide, the husband was asked as to dosage of the drug. He stated that the patient had gradually increased the dosage in desperation for relief until she was taking 240 mg. daily. He had bought all she had asked for because he considered the situation hopeless anyway. When questioned about other drugs, he denied that he had given her anything except an occasional tablet of phenobarbital when she was fearful or anxious. For that purpose he had obtained a prescription from a local physician. No one had prescribed bromide or any other medication except as stated.

A blood bromide determination was ordered on that day. During the night the patient died in her sleep. On the following day the laboratory report was obtained, showing a concentration of bromide in the blood amounting to 225 mg. per hundred cubic centimeters.

COMMENT

No other instance of bromide intoxication has been found reported in the literature from prostigmine bromide. Of the 240 mg. of prostigmine bromide taken daily only a relatively small portion would be bromine, and even if the entire quantity was calculated as "bromide" the dosage would be smaller than that which is ordinarily considered dangerous, yet this small amount accumulated in the patient's blood to cause bromidism.

Doctors using prostigmine bromide in cases of myasthenia gravis should be warned to guard against bromidism. The danger can be avoided by stringent supervision or by an occasional change to prostigmine methylsulfate.

727 West Seventh Street.

Special Article

HANDBOOK OF NUTRITION: XXVI

PRINCIPLES OF DIET IN THE TREATMENT OF DISEASE

TOM D. SPIES, M.D.
CINCINNATI

These special articles on food and nutrition have been prepared under the auspices of the Council on Foods and Nutrition. The opinions expressed are those of the authors and do not necessarily reflect the opinion of the Council. These articles will be published later as a Handbook of Nutrition.—ED.

Although the importance of diet in the treatment of disease was emphasized by Greek and Roman physicians, a true conception of the value of food as a therapeutic agent has been gained only in recent years. The many ramifications of our knowledge concerning food could not be listed, let alone described adequately, within the scope of this paper. The administration of indicated foodstuffs or their specific constituents to persons with specific deficiency diseases is followed by miraculous improvement. The judicious use of these specific substances as therapeutic agents is revolutionizing the practice of medicine. Even more benefits to mankind would follow the application of this knowledge toward the prevention of these nutritional diseases. Certain it is that proper nutrition is essential for the health and vigor of the higher forms of life, and every living cell in the human body requires specific nutrients. Though the cell must have these nutrients, some of them it cannot always make. Accordingly, they must be supplied if the body is to function normally.

Respiration and growth of cells involve the synthesis of complex substances from simple ones. When the available simple compounds are inadequate to supply the needs of the body, as the result of inadequate assimilation, increased demand, increased loss or a decreased supply, a disorder is initiated and factors which operate to maintain nutritional balance are brought into play. These beneficial mechanisms may act very efficiently at first and against lesser odds when the detrimental factors are not too protracted. Excessive physical exercise, acute infections and fever affect adversely those factors which tend to maintain nutritional balance. In the beginning of many deficiency diseases, levels of the essential substances in some tissues are decreased at the expense of others. In other words, there is a protective homeostatic control of the storage and distribution of many of these substances vital to the cells. Equilibration becomes more and more difficult to achieve as time goes on. One could say, perhaps arbitrarily, that the dietary deficiency development is under way and that at least a biochemical lesion is present. When this lesion is severe enough, functional disturbances arising from various parts of the body become manifest. Vasomotor instability in the skin, functional disorders of the alimentary tract, nervous system or circulatory system may occur. There is no regular order to the appearance of these symptoms, and presumably they are affected by hereditary predisposition or trauma in the wear and tear of everyday life. Certain it is that the clinical picture is complex and is composed of an infinite variety of symptoms. After many months of severe or persistent symptoms, accompanied perhaps by slight chemical and physiologic alterations, structural changes begin to appear in the various tissues, and ultimately the clinical diagnosis can be made.

The practicing physician who at last is called on to treat a case of clinical deficiency disease is faced with a nutritive breakdown. Yet he has little information of the previous nutritional status of the patient, a factor of great importance in restoring and maintaining his health. Since 1936 my associates and I have been faced with the same problem and, like the practicing physician, we realized the necessity of initiating immediate therapy. At the same time, however, we have been especially interested in devising methods of persistent therapy of a type which would eliminate such dicta as "once a pellagrin, always a pellagrin." Accordingly, in treating each patient we began the long and arduous task of determining the factors responsible for his nutritive breakdown, for it is only by their elimination that one can avoid recurrences. This paper is concerned

TABLE 1.—*Nutrition History*

Name: Mrs. J. S. Age: 29 Address: Trussville, Ala. Date: Oct. 21, 1941

Food—Amount used
- Whole milk—1 cup daily
- Skimmed milk—0
- Canned milk—0
- Cheese—0
- Butter—0
- Other fats—pork fat—liberal amount
- Eggs—2 weekly

Meats
- Lean meat (beef, lamb, pork)—0
- Liver—0
- Fat meat—0
- Fish—1 medium size serving about once a month
- Fowl—0
- Salt pork—1 serving daily (about 1 ounce)

Vegetables and Fruits
- Potatoes, Irish—3 large servings weekly
- Potatoes, sweet—0
- Dried vegetables—1 serving daily
- Greens—3 servings weekly
- Tomatoes—0
- Other vegetables
  - Cooked—seldom used
  - Raw—seldom used
- Orange—0
- Grapefruit—0
- Dried fruit—0
- Other fruit—0

Breads
- Cornbread—3 or 4 large pieces daily
- Biscuit—5 or 6 daily
- Loaf bread: white—0; whole wheat—0
- Crackers—0

Cereals
- Rice—0
- Grits—1 serving daily
- Oatmeal—0
- Others—0

Desserts—0

Sugar—4 or 5 teaspoons daily

Syrup—2 tablespoons daily

Other foods—0

Yeast

Other vitamins—0

Beverages
- Tea—0
- Coffee—2 cups daily
- Soft drinks—
- Alcoholic beverages—0

Snuff—yes

Other tobacco—0

Appetite—poor—some days eats less bread

How long was this diet used?—past year

Variations in kind and amount of food used—during winter has had green vegetables only once a week

Economic status
- Number in family
  - Adults—2
  - Children—4 (ages: 1, 3, 5, 6 years)
- Urban—√; Rural—; Rent—√; Own—
- Income (source and amount)—Husband works in lumber yard—$50 per month
- Welfare—0; food stamps—0

Food supply
- Food produced at home—
  - Garden—0; summer—; winter—
  - Vegetables—
    - Dried—
    - Corn—
    - Potatoes—
    - Others—
    - Fruit—
  - Canned foods—fruit—0; vegetables—0
  - Cows—0; milk supply (what months)
  - Hogs—0
  - Chickens—0
- Eggs (what months)—0

with the principles of practical therapy which have been derived from the application of the methods outlined to thousands of our cases during the past several years. While other investigators have made similar studies, we are somewhat more familiar with what we have done. Accordingly, we are reporting our methods in some detail with the assurance that they would have the general support of other investigators in the field.

TABLE 2.—*Case Illustrating Unsatisfactory Diet*

Food	Amount Recommended for an Adequate Diet *	Amount Used by Patient
Milk	2 cups daily	† 1 cup daily
Eggs	3-4 weekly	† 2 weekly
Meats:		
Lean beef, liver, lamb, veal, lean ham or pork, chicken or fish	5-6 small servings weekly	† 1 medium size serving of fish once a month
Salt pork	.....	1 serving daily (about 1 ounce)
Vegetables and Fruits:		
Tomato, orange or grapefruit	5 servings weekly	† None
Potato or sweet potato	1-2 servings daily	† 3 servings weekly
Dried vegetables or nuts	4 servings weekly	1 serving daily
Leafy green and yellow vegetables	6 servings weekly	† 3 servings weekly
Other vegetables and fruits	6 servings weekly	† Seldom used
Bread: enriched or whole grain	At every meal	† Liberal amount, but none of it enriched or whole grain
Cereal—whole grain	At least 1 serving daily	† 1 serving daily but not whole grain
Desserts	1 serving daily	† None
Sugar and syrup	As desired	Moderate amount
Butter or fortified oleomargarine	2 tablespoons daily	Liberal amount of pork fat

* Based on "Planning Diets by the New Yardstick of Good Nutrition," Bureau of Home Economics, United States Department of Agriculture, Washington, July 1941.
† Indicates foods of which patient did not eat sufficient amounts.

The essence of successful treatment is early and accurate diagnosis. The diagnosis of clinical conditions and the assessment of the nutritional status of a patient and his family can best be made by a conservative interpretation of the data from a dietary and food survey, a complete medical history and physical examination, and special laboratory determinations. The brief outlines which follow serve in our hands to gather partial information of the type needed. As in any other field of medicine, we attempt to gather information about the person as well as his disease; accordingly, it is impossible to give an outline which would suffice in all details for every person.

DIETARY ASSESSMENT

It is of primary importance to obtain a nutrition history when the patient is first seen. If the diet is found inadequate, tentative nutritional deficiencies are suspected, even though there is no diagnostic clinical manifestation at the time. In such instances, repeated dietary evaluation, laboratory studies and general clinical check-ups are made. If the diet seems adequate to meet normal nutritional requirements and the patient has lesions of nutritional failure, we begin our search for some condition which is increasing the nutritive requirements or interfering with the absorption or utilization of nutrients. For several years we have used the type of nutrition history shown in table 1 and have found it satisfactory for the initial studies of a person suspected of nutritional imbalance. Since we have placed ourselves in the position of the practicing physician, we believe this type of history will be a valuable aid to him in collecting data for a precise diagnosis and treatment. This can best be illustrated by the case shown in table 2. By comparing the food eaten by the patient whose nutrition history is shown here with the food she needs, it is apparent that her diet falls far short of being satisfactory. Although this type of nutrition study does not allow an accurate calculation of the various nutrients in the dietary, it has the advantage of not requiring a great deal of time or special training on the part of the persons taking or evaluating the data.

We have found it desirable to make a thorough inventory of the income and food resources of the patient and his family, though it is time consuming, for not infrequently this material gives us a lead in determining the adequacy of his diet. If the income is low and food resources are meager, it is almost certain that the diet has been inadequate and it is desirable to study the nutritional status of the patient very carefully. We wish to point out, however, that it is fallacious to consider that an adequate or even a liberal income means that the diet has been adequate. Many persons who have liberal funds available for food fail to eat a proper diet. Others whose income is on first glance seemingly too low to provide a good diet, by careful budgeting and a wise selection of food, manage to get what they need to meet their nutritive requirements. But there is a point below which the income and food resources cannot fall and still provide an adequate diet. For example, we found that the minimum cost of the food needed to satisfy National Research Council standards for a family of five, living in this geographic location, to be $8.60 a week, whereas a particular family we had studied had a food allowance of $2.50. No other

Fig. 1.—Form for recording history.

sources of food, such as a garden, chickens or livestock, were available to them.

Frequently, trained observers keep an accurate record of the patient's food intake for a period of a week or more at various seasons of the year. From this the nutritive value of the dietary is evaluated and the degree

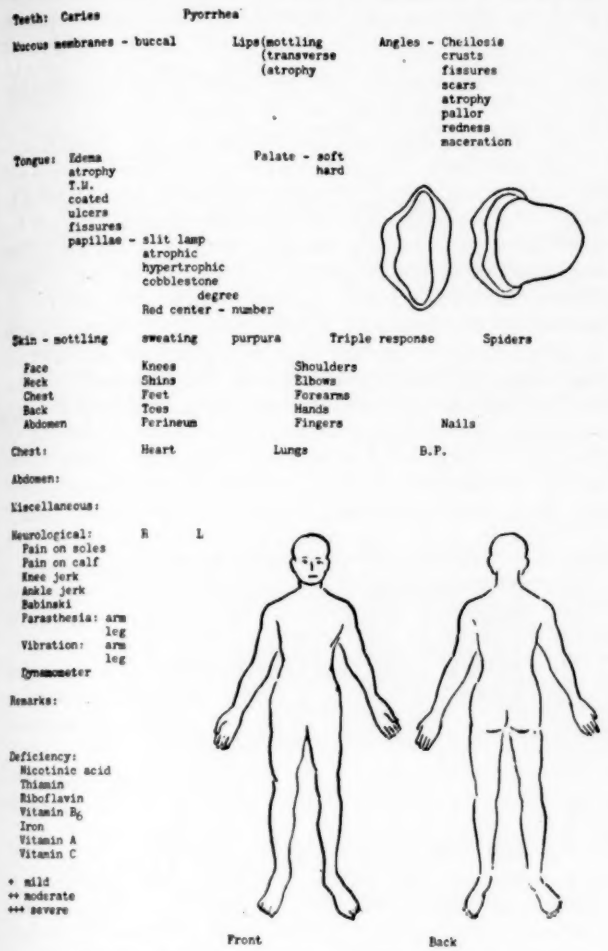

Fig. 2.—Continuation of form for recording history.

of deficiency of his diet is correlated with clinical findings and laboratory tests. Although such a study gives interesting results and has been of some value to us in determining the degree of deficiency of the various nutrients in the dietaries of many of our patients, it is too arduous and time consuming to be used as a routine procedure by the practicing physician. It requires the expenditure of a great deal of time both with the patient and in the calculation of the results. Such a method is practical only if the patient is sufficiently intelligent and cooperative to keep an accurate record of his food intake and if the time and services of a trained nutritionist are available to supervise the collection and summarization of the data and to calculate the nutritive value of the dietaries.

No human being is able to give a dietary history as comprehensive as the physician might wish, and if one was to rely solely on dietary assessment he would fall far short of the goal of accurate diagnosis which is the first requirement for satisfactory therapy.

SYMPTOMS AND PHYSICAL SIGNS

Of necessity the physician must place the greatest reliance on a complete history and physical examination (figs. 1 and 2), as a diagnosis cannot be made except by clinical methods. It is customary in our studies to regard each person individually and to vary somewhat the general history, physical examination and special examinations, depending on the nature of the symptoms he presents. In all instances, information which satisfies the complete history and examination forms as listed in figure 3 is obtained. In addition, special organ systems are studied as indicated. Detailed examination of the mouth is particularly stressed.

When we have satisfied ourselves that the infants and children under our observation receive considerably less than the recommended allowance of essential nutrients, we are willing to accept the following symptoms as suggestive though not diagnostic of deficiency states: loss of desire for food and failure to gain weight; poor muscle tone, and aversion to play; abnormal tardiness in sitting, standing and walking, and pain on sitting or standing; insomnia, poor record in school; repeated respiratory infections; chronic diarrhea; photophobia, lacrimation, abnormal dryness and burning of the eyes; pallor; rough skin; fissures and maceration at the angles of the mouth; abnormally red tongue; increased pulse rate; beading of the ribs; enlarged wrists; square head; serious dental abnormalities, and Vincent's infection.

Likewise, in adolescents and adults, the following symptoms occurring in persons known to have ingested inadequate amounts of required nutrients suggest deficiency states: weakness; lassitude; lack of desire for

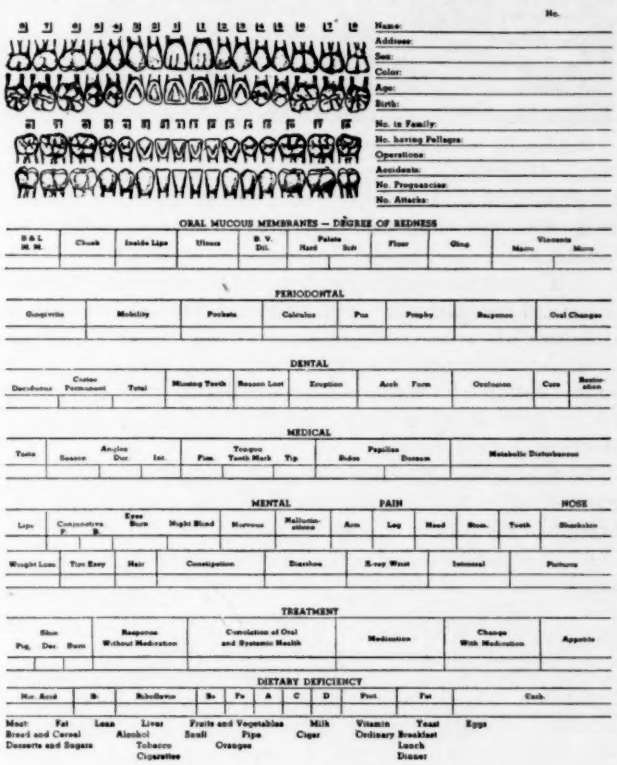

Fig. 3.—History and examination form.

food; loss of weight; failure of mental application; sore mouth or tongue; constipation or diarrhea; nervousness and irritability; paresthesia; night blindness; photophobia; burning and itching of the eyes; lacrimation; general pains in the muscles or joints; Vincent's infection; cheilosis; red, swollen lingual papillae; glossitis, stomatitis, vaginitis, poor muscle tone, loss of vibratory sensation; alteration of tendon reflexes;

hyperesthesia of the skin; bleeding gums; dermatitis; abnormal pigmentation of the skin, particularly over the points of pressure; rachitic chest deformity; anemia; abnormal dryness or conjunctival injection of the eyes; vascularization of the cornea; inability to accommodate properly.

It has been customary to present through textbooks and lectures the manifestations of severe degrees of deficiency diseases. Hence it is little wonder that the milder forms have gone unrecognized and the real incidence is not always fully appreciated. Yet it is highly desirable that the physician make an early and accurate diagnosis in order to initiate therapy which will restore the patient's health before serious structural damage occurs in the tissues. For the most part the arrangement of the descriptive material in the previous chapters has been grouped around one nutrient or one disease arising from a deficiency of a single nutrient. This description certainly is justifiable, but it assumes a degree of simplicity which does not occur in the physician's day to day practice of medicine.

SPECIAL LABORATORY TESTS OF USE IN DIAGNOSIS

After we have analyzed the dietary record, medical history and physical examination and find symptoms in persons whom we suspect of having nutritional deficiency disease, we attempt to gain special information by means of laboratory tests. While they are not all practical for practicing physicians, facilities for some might be available to some physicians.

1. Hemoglobin determinations, red blood cell counts, and packed cell volumes are very important routine measures.

2. X-ray examination of the long bones should be made to detect active and healing rickets, and serum phosphatase and phosphorus determinations to detect early rickets. Serum calcium determinations are also useful.

3. Protein serum albumin determinations by the Kjeldahl technic are especially useful when protein deficiency is suspected.

4. Ascorbic acid determinations on plasma are useful in determining vitamin C subnutrition. Determination of the level in white cells often is made when vitamin C deficiency is advanced.

5. Slit lamp and biomicroscopic examinations of the capillaries in the conjunctiva and cornea are extremely valuable aids.

6. The detection of prothrombin deficiency is applied when vitamin K deficiency is suspected in persons with liver disease, particularly jaundice, or in expectant mothers.

7. The B. E. S. test, the recent colorimetric method described by Beckh, Ellinger and Spies, is of considerable clinical use in detecting small quantities of abnormal pigments in the urine of persons with "subclinical" and clinical deficiency states.

8. We frequently do determinations for vitamin A, thiamine, nicotinic acid, riboflavin, pantothenic acid, biotin and pyridoxine. In some instances these laboratory findings can be correlated with the clinical findings; in others, they cannot.

9. Myriads of Vincent's organisms, staphylococci and streptococci can be identified in smears taken from mucous membrane lesions in the mouth or in the vagina. The staphylococci and streptococci often can be isolated in pure culture from the lesions of riboflavin deficiency. The organisms in these lesions disappear rapidly after specific therapy is given to the patient.

10. Gastric analyses are made before and after histamine injections—we determine free hydrochloric acid, pepsinogen and rennin, and in special cases determine the presence or absence of the intrinsic factor of Castle.

SPECIFIC PRINCIPLES OF THERAPY AND SUGGESTED METHODS OF APPLICATION

The more we have studied diseases arising from nutritional imbalance, the more we have become impressed with the great factor of safety operating to protect the body. Life continues long after deficiency states set in, and there is always a margin of safety between the beginning of ill health and death from nutritional failure. When functions of the tissues become diminished or altered as the result of a deficiency over long periods of time, there is usually quick restoration of function following adequate amounts of specific therapy. Nevertheless there is a limit to the self regulation, and indeed, at times, to the repair which is possible as a result of therapy. These vital substances frequently must come to the human body from an external source, and, since the body does not conserve all, it is important that a person with nutritional deficiency diseases have as little activity as possible while repairs to the affected tissue are under way. The specific agents, whether they are food, yeast, liver or extracts of these substances or synthetic vitamins, serve in a natural manner to perform a natural function. The recommendations which are to be made have arisen chiefly from the gratifying experience of having treated over 5,000 consecutive patients with dietary deficiency diseases without a death.

Deficiency diseases are not rare. The apparent mystery surrounding them is due in great part to gaps in our present day knowledge. Nevertheless, the practicing physician should and must apply the best knowledge available to the diagnosis and treatment of nutritional deficiencies. To do so, our experience would lead us to suggest that his diagnosis will depend chiefly on a reliable interpretation of a carefully taken history and a thorough physical examination. When taking the history, the physician should have in mind that deficiencies of the essential nutrients are particularly prevalent in the following four groups:

1. Those who are indigent and have erroneous dietary habits or dietary idiosyncrasies. Many such persons live for a long period of time on a diet low in protein and calories, minerals and vitamins, and relatively high in carbohydrates and fats. These dietaries often contain far too little milk products, lean meat, fish, green vegetables and fruits.

2. Persons with organic disease. The incidence of deficiency diseases is especially high among persons with chronic tuberculosis, diseases of the alimentary tract and cardiovascular system and diabetes, which interfere with the ingestion, assimilation or utilization of the protective substances present in food. Many of these persons have an opportunity to eat sufficient amounts but because of their disease either have lost their desire to eat or are unable to utilize it properly.

3. Too frequently the overzealous physician in treating a certain type of organic disease prescribes a diet so deficient that nutritive failure is gradually induced. While we do not wish to give the impression that all therapeutic diets are necessarily inadequate diets, we

not infrequently find patients develop nutritional diseases as the result of restriction to diets prescribed for therapeutic purposes. Figure 4 illustrates some of the deficiencies occurring in diets consumed by persons with nutritional diseases who came to us for treatment. We suggest that the physician prescribing special therapeutic diets check the food recommended with that which he knows is required for the adequate diet. If the restrictions are of such nature that the foods permitted cannot provide the essential nutrients in adequate amounts, it is recommended that he supplement those nutrients as required by use of synthetics or concentrates.

4. Persons with chronic alcoholic addiction. Persons who substitute the calories in alcohol for the calories in food are prone to develop deficiency diseases. If, however, a liberal adequate diet is eaten, deficiency diseases are not likely to occur even when large amounts of alcohol are ingested.

It should be kept in mind that in all groups many undernourished people never develop a clinical sign diagnostic of a specific deficiency disease. Irrespective of whether the deficiency develops following poverty, dietary idiosyncrasies, organic diseases, alcoholic addiction, erroneous dietary habits or any combination, the fat soluble group, occur together in fish liver oils and are customarily used together therapeutically. Vitamin K is usually classified as a fat soluble compound, though water soluble synthetic compounds having vitamin K activity are available. Vitamin K should be considered as a special substance essential for the maintenance of normal concentration of prothrombin in the blood. Except for the hemorrhagic disease of the newborn, a deficiency is usually the result of faulty absorption rather than inadequacy of vitamin K in the diet. Vitamin E is being extensively studied, but as yet its value in the treatment of diseases of human beings is a matter of conjecture. The vitamins of the B complex are water soluble and found especially in such natural products as yeast and liver. Viable yeast and liver cells function as an active laboratory in producing these substances. They appear to be intimately concerned with carbohydrate metabolism. Ascorbic acid is a member of the water soluble group and is specifically concerned in the prevention and treatment of scurvy.

Too often polyvitamin products have not been as useful as they might have been. It seems wise that the amount of vitamins in mixtures should bear a relationship to the normal daily requirements. The physician in turn may then prescribe amounts of these vitamins as

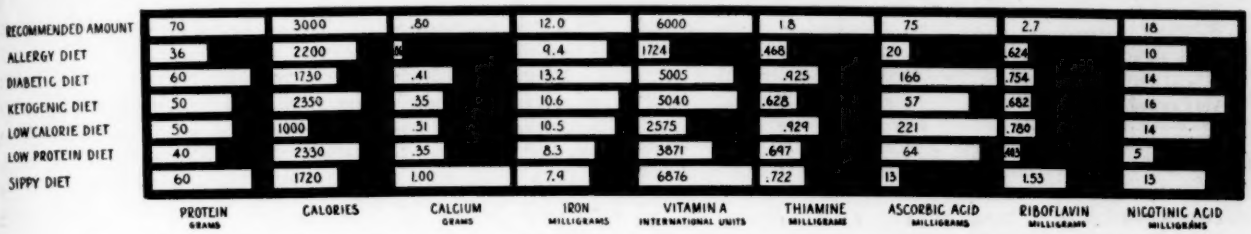
RECOMMENDED AMOUNT
ALLERGY DIET
DIABETIC DIET
KETOGENIC DIET
LOW CALORIE DIET
LOW PROTEIN DIET
SIPPY DIET
70 3000 .80 12.0 6000 1.8 75 2.7 18
36 2200 9.4 1724 .468 20 .624 10
60 1730 .41 13.2 5005 .925 166 .754 14
50 2350 .35 10.6 5040 .628 57 .682 16
50 1000 .51 10.5 2575 .929 221 .780 14
40 2330 .35 8.3 3871 .647 64 .483 5
60 1720 1.00 7.9 6876 .722 13 1.53 13
PROTEIN GRAMS
CALORIES
CALCIUM GRAMS
IRON MILLIGRAMS
VITAMIN A INTERNATIONAL UNITS
THIAMINE MILLIGRAMS
ASCORBIC ACID MILLIGRAMS
RIBOFLAVIN MILLIGRAMS
NICOTINIC ACID MILLIGRAMS

Fig. 4.—Amounts of nutrients supplied by certain therapeutic diets compared with amounts recommended for an adequate diet.

lesions, symptoms, seasonal incidence and methods of treatment are essentially the same.

Foods, dried brewers' yeast, liver concentrates and synthetic vitamins, and certain minerals, are as much a part of the present day physician's armamentarium as arsphenamine and insulin. To consider diet properly the physician should think in terms of enough dextrose, amino acids, fatty acids, minerals and vitamins. The foods in the alimentary tract are altered through successive steps of digestion and absorbed into the blood stream and passed into the tissues. The proteins are absorbed as amino acids, the carbohydrates as sugars, and the fats as fatty acids. The vitamins and minerals are altered little if any. The body can synthesize only about one half of the different amino acids which are required, and the other half must be provided. Amino acids may be turned into urea or their carbon fractions used to form dextrose, or they may "sacrifice themselves" to protect us from poisonous products. Perhaps they can serve as source material to act with or aid in synthesizing certain compounds of physiologic function still to be identified. Some of these amino acids enter into the proteins of the tissue and, like the dextrose, the fatty acids, the minerals and the vitamins, become for a time parts of our living tissues.

Long ago we learned that the diagnosis of one clinical syndrome denoting nutritional failure necessitates a thorough search for others. While individual vitamins have special functions, they are wisely administered together. Vitamins A and D, which are members of the

multiples of the estimated daily requirement. Recently, the National Research Council has seen fit to make the recommendations presented in table 3.

Where synthetic vitamins, such as riboflavin, nicotinic acid or thiamine, are added to dried brewers' yeast or liver, it is desirable that a substantial amount of the vitamins come from the yeast or liver.

METHODS OF THERAPY

Therapy should be directed along four lines: 1. Conditions causing excessive requirements for nutritional essentials should be removed or relieved wherever possible. 2. Substances should be administered in sufficient amounts to correct the deficiency. 3. Symptomatic treatment and treatment for coexisting diseases should be given. 4. A liberal amount of a well balanced diet, which has been discussed in other portions of this book, should be prescribed. It is often necessary to combine specific therapy, symptomatic therapy and the treatment of coexisting diseases in order to treat the patient successfully. The very essence of treatment for nutritional diseases lies in the administration of foods rich in proteins, minerals and vitamins, supplemented by specific therapeutic agents. The foods prescribed will depend on the nature of the deficiency and the age, race, habits, tastes and financial status of the patient concerned. The diet should be supplemented with appropriate preparations in terms of dried brewers' yeast or liver extract, or concentrates thereof, or of synthetics or minerals. More specifically, we find that, where clinical syndromes arise from a deficiency of

vitamins, a deficiency of many other essential nutrients is likely to exist. It is of prime importance in prescribing for every case to insure the ingestion and retention of a diet which meets the patient's nutritive requirements. This diet must be one that the patient can eat, digest and assimilate. It must be remembered, however, that to rely on dietary therapy is inadvisable and unpractical. Deprivations of the nutrients usually have existed for years and often the deficiency is advanced so that the food the average person can eat is not sufficient to supply the amount of the food factors necessary to restore his health promptly.

Our clinical experience and controlled studies have led us to adopt a policy of mixed vitamin therapy in treating nutritional deficiencies. The amounts of therapeutic substances prescribed necessarily vary considerably from patient to patient and even in the same patient it varies at different times. It is better to prescribe too much than too little, too soon rather than too late. Although there are many ways of treating nutritional deficiencies, we have found that the following therapy gives satisfactory results:

TABLE 3.—*Recommended Daily Allowances of Vitamins*

	Vitamin A, U. S. P. Units	Thiamine, (B_1), Mg.	Riboflavin, Mg.	Nicotinic Acid, Mg.	Ascorbic Acid, Mg.	Vitamin D, U. S. P. Units
Man (70 Kg.)						
Moderately active	5,000	1.8	2.7	18	75	.....
Very active	.....	2.3	3.3	23	75	.....
Sedentary	.....	1.5	2.2	15	75	.....
Woman (56 Kg.)						
Moderately active	5,000	1.5	2.2	15	70	.....
Very active	.....	1.8	2.7	18	70	.....
Sedentary	.....	1.2	1.8	12	70	.....
Pregnancy (latter half)	6,000	1.8	2.5	18	100	400-800
Lactation	8,000	2.3	3.0	23	150	400-800
Children up to 12 years						
Under 1 year	1,500	0.4	0.6	4	30	400-800
1-3 years	2,000	0.6	0.9	6	35	.....
4-6 years	2,500	0.8	1.2	8	50	.....
7-9 years	3,500	1.0	1.5	10	60	.....
10-12 years	4,500	1.2	1.8	12	75	.....
Children over 12 years						
Girls, 13-15 years	5,000	1.4	2.0	14	80	.....
16-20 years	5,000	1.2	1.8	12	80	.....
Boys, 13-15 years	5,000	1.6	2.4	16	90	.....
16-20 years	6,000	2.0	3.0	20	100	.....

In treating the clinical syndromes of beriberi, pellagra, riboflavin deficiency and scurvy, we use a formula containing 10 mg. thiamine, 50 mg. niacin, 5 mg. riboflavin and 75 mg. ascorbic acid. If the symptoms of one deficiency predominate we add to the basic formula more of the vitamin specific for the predominating deficiency. In the case of beriberi, 10 mg. of thiamine is added daily; in riboflavin deficiency 5 mg. of riboflavin b. i. d. daily; in scurvy 100 mg. of ascorbic acid t. i. d., and in mild pellagra 50 mg. of niacin amide t. i. d. If the pellegra is severe, the patient is given 150 mg. of niacin amide t. i. d. in addition to the basic formula. When the patient is moribund from nutritive failure due to deficiencies of the vitamin B complex it may be necessary to resort to parenteral injections in order to prolong and indeed even to save life. When large amounts of d-glucose are injected daily, we recommend the inclusion of 20 mg. of niacin amide, 75 mg. of riboflavin and 5 mg. of thiamine. In a few instances we have found it desirable to inject 50 mg. of ascorbic acid in isotonic solution of sodium chloride.

Dried brewers' yeast powder, liver extract, wheat germ and rice polishings are excellent therapeutic agents for the treatment of diseases arising from a deficiency of the B complex vitamins. These substances are particularly valuable in that they contain significant amounts of protein and other essential nutrients, and probably vitamins of the B complex as yet unknown. The amount administered depends on the severity of the disease. We usually give daily from 4 to 6 ounces of dried brewers' yeast powder or oral liver extract; from three to four doses of 20 cc. of parenteral liver extract, or from 150 to 300 Gm. of wheat germ. Although other investigators have had success with rice polishings, our experience with it is not wide enough for us to make specific recommendations in regard to its use. Some patients complain of the taste of these materials, in which case we disguise the taste by stirring them into milk or tomato juice or by mixing them with water and adding tomato catsup. They can be added to bouillon, sprinkled over cereals or added to eggnog. We have found that a mixture of approximately 20 per cent dried brewers' yeast by weight added to 80 per cent peatnut butter is acceptable to persons who like peanut butter. A mixture of this yeast and peanut butter is practical and if used wisely would go a long way toward correcting the deficiencies of protein, fats, calories and B complex vitamins in the diets of many persons.

In vitamin A deficiency, we give adults 50,000 units of vitamin A daily for at least two months. It may be given in the form of carotene or fish liver oils. The clinical response in vitamin A deficiency is often slow and it may be necessary to continue treatment over a long period of time before beneficial effects are observed.

Children with active mild rickets are given 1,600 I. U. of vitamin D daily in the form of fish liver oils or irradiated ergosterol. To those with advanced rickets, 5,000 I. U. is given, while in rare cases of refractory rickets 50,000 I. U. or more is often administered. We wish to point out that although a daily dose of 800 I. U. is considered the safe prophylactic dose for full term infants, premature infants may require 3,000 I. U. In juvenile, adult and senile rickets large doses of the vitamin D concentrates, 10,000 I. U. daily, should be given for therapeutic purposes.

In hemorrhagic disease due to vitamin K deficiency in the newborn infant we give 1 mg. of vitamin K often by intravenous injection. To adults with vitamin K deficiency we give 1 to 5 Gm. usually by the parenteral route. In cases in which bile is excluded from the intestine, orally administered vitamin K, since it is fat soluble, must be accompanied by some bile salt preparation to aid in its absorption.

We never regard the treatment as satisfactory until the patient has gained significantly in strength and his weight has returned to normal. Unfortunately, many physicians take the point of view that deficiency diseases can be overcome by a few days treatment. This is not surprising since the immediate result of therapy is often dramatic. Nevertheless, deficiency diseases which have taken months or even years to develop cannot be eliminated quickly. We have found it wise to keep our adult patients under observation until they return to work and are able to continue to work for several months.

Council on Physical Therapy

THE COUNCIL ON PHYSICAL THERAPY HAS AUTHORIZED PUBLICATION OF THE FOLLOWING REPORT, WHICH IS A REVISION OF THE REPORT WHICH APPEARED IN THE JOURNAL OF JAN. 24, 1942, PAGE 298.

HOWARD A. CARTER, Secretary.

ACCEPTANCE OF ULTRAVIOLET LAMPS FOR DISINFECTING PURPOSES

After due consideration of the present status of the use of ultraviolet radiation as a germicide, in consultation with bacteriologists, physicists, chemists, ventilating engineers and other scientists, the Council on Physical Therapy has adopted the following regulations for acceptance of ultraviolet lamps for use as an adjuvant in the disinfection of air.

It is to be noted that a lamp used for disinfecting purposes is a single unit in an installation, and that compliance of the ultraviolet output of a single lamp unit with the Council's requirements does not insure adequate radiant disinfection or the safety of the occupants of the room in which an installation of such lamps is in actual use. Obviously the manufacturer and distributor of such lamps must assume some responsibility for the adequacy of the lamp installation for purposes of radiant disinfection of the air and for the adequacy of the protection from injury of the occupants of the space irradiated. Concerning these questions the Council cannot undertake supervision or assume responsibility for the satisfactory performance of any particular installation.

The total amount of direct and scattered ultraviolet radiation incident on the occupants must be kept below the level that will produce conjunctivitis, erythema and any other (at present unforeseen) injurious physiologic effects that may arise from prolonged irradiation. This requirement should be met by a suitable arrangement of the lamp fixtures and light baffles and not by requiring the usual occupants to wear glasses and a special covering of the parts of the body (face, hands) normally uncovered.

The efficiency of the emission line 2,537A (angstroms) in producing an erythema is very high and, in contrast, the efficiency of this emission line in producing tan is very low.[1] As a result of this slow acting protective mechanism (tanning, skin pigmentation) the irradiated occupant of the room may suffer severe burns. The data governing the Council's Acceptance of Sun Lamps show that an intensity of 36 microwatts per square centimeter can produce an erythema in fifteen minutes. If the reciprocity law holds for very low intensities and long exposures, then the total intensity of the ultraviolet radiation (diffusely reflected from the walls and fixtures and emanating directly from the lamp) incident on the occupant for seven hours or less should not exceed five-tenths microwatt per square centimeter ($0.5\mu W/cm.^2$) and for continuous exposure (twenty-four hours a day) should not exceed 0.1 microwatt per square centimeter of wavelength 2,537A. How to design the lamp installation to meet the requirements for adequate disinfection of a room and at the same time protect the occupants is a problem for solution by the sanitary engineer.

At the present juncture the design and installation of ultraviolet lamps in their fixtures for disinfecting purposes is empirical and the adequacy of disinfection by any given installation of lamps must be judged by clinical experience. For example, clinical evidence has been submitted to the Council showing that, in a scarlet fever ward (size about 60 by 27 by 11 feet) containing sixteen cubicles, four lamp units, each one emitting a radiant flux of 30 microwatts per square centimeter at 1 meter, were found inadequate; but eight lamp units in the ward, each unit protecting two cubicles, and a ninth unit at the entrance, prevented cross infection. This is a rather high intensity (requiring twenty minutes calculated time to produce a minimum perceptible erythema) incident on a person of average height, standing directly under a lamp fixture suspended from a ceiling of average height. A greater number of lamps, each one of lower ultraviolet intensity (say 20 microwatts per square centimeter at 1 meter) and lower power input, more evenly distributed throughout the room should be safer and equally efficient in disinfecting the air. This is a matter of engineering design, beyond the scope of the Council's purview.

1. Luckiesh, Matthew, and Taylor, A. H.: Production of Erythema and Tan by Ultraviolet Energy, J. A. M. A. **112**: 2511 (June 17) 1939.

PHYSICAL DATA ON DISINFECTING LAMPS

Experimentally, applying equal amounts of energy of different wavelengths, it is found that the spectral band at 2,652A appears to produce the maximum bactericidal action and that the emission band at 2,537A is only about 70 per cent as effective. This difference in effectiveness is negligible in the present considerations because in readily obtainable sources of germicidal radiation, especially in the low vapor pressure (high voltage) mercury discharge tube, which is well adapted for killing microorganisms, the ultraviolet radiant power of wavelength 2,652A is less than 0.2 per cent of that of wavelength 2,537A, the resonance emission band that dominates the whole ultraviolet spectrum of this type of lamp.

About 90 per cent or more of the total biologically effective ultraviolet radiation of wavelengths shorter than 3,132A emitted by the low pressure mercury discharge (whether in quartz or in a transparent glass tube) is concentrated in the emission line at 2,537A. For this reason the emission line at 2,537A, logically and by common consent, is taken as the standard of homogeneous ultraviolet radiation for evaluating the ultraviolet output of germicidal lamps, just as the wavelength 2,967A in the high vapor pressure (low voltage) mercury arc is taken as the standard of homogeneous ultraviolet erythematogenic and antirachitic radiation in evaluating the ultraviolet output of therapeutic lamps.

The low pressure mercury discharge in a suitable glass tube or in a suitably filter jacketed quartz tube which readily transmits the strong, highly germicidal emission line at 2,537A but is opaque to wavelengths shorter than about 2,200A (that generate ozone) appears suitable to supplement other means of disinfection when operated under controlled conditions and limited to certain types of applications. In other words, the room must be relatively free from dust and infecting bacteria, without the use of ultraviolet disinfecting lamps. Ultraviolet radiation is not a substitute for cleanliness.

From the evidence available it appears that a minimum of 5,000 to 10,000 microwatt seconds per square centimeter (μW sec./cm.^{2} or 50,000 to 100,000 ergs/cm.^{2}) of homogeneous radiation of wavelength 2,537A is required to produce adequate (practically 100 per cent) killing of micro-organisms, especially bacteria. With an exposure of fifty to one hundred seconds this will require an intensity of 100 microwatts per square centimeter.

The Council has adopted 100 microwatts per square centimeter of homogeneous radiation of wavelength 2,537 angstroms as the unit of germicidal intensity (G. U.); that is, 1 G. U. = $100\mu W/cm.^2$ of radiation of wavelength 2,537A.

Since the ultraviolet emission from the low vapor pressure mercury discharge tube is practically homogeneous radiation of wavelength 2,537A, such a lamp can be readily calibrated in absolute value and used as a standard. The intensity at 1 meter may be only one fifth of the Council's unit, or 20 microwatts per square centimeter, for safety to the occupants. This will require a minimum exposure of two hundred and fifty to five hundred seconds for adequate disinfection, which will depend on the rate of circulation and average distance of the air in front of the lamp. Evidence has been submitted to the Council showing that cross infection in a contagious ward may be prevented by using a sufficient number of lamp units, each unit having an intensity of 30 microwatts per square centimeter at a distance of 1 meter from the burner. This will require an exposure of one hundred and sixty-seven to three hundred and thirty-four seconds for adequate disinfection, which implies a slow movement of the air in front of the lamp installation.

SCOPE OF THE COUNCIL'S ACCEPTANCE OF ULTRAVIOLET LAMPS FOR DISINFECTING PURPOSES

The Council has given careful consideration to the feeling, expressed by manufacturers vitally concerned in the matter, that the general acceptance of the use of ultraviolet radiation as a

sanitary agent may necessitate some form of regulation, and that ultraviolet generating units offered to the public and medical profession may be classed with antiseptic agents requiring a degree of control of their potency and keeping qualities.

Under this caption is given an analysis of various proposed applications of ultraviolet radiation as a disinfectant and a statement of the specific applications that appear to fall within the Council's purview.

The advantages and disadvantages of the use of germicidal ultraviolet radiation for sterilizing purposes are summarized in the recent (1941) issue of "The Chemical Action of Ultraviolet Rays," by Ellis and Wells, second edition, by Francis F. Heyroth (see p. 718, "The Sterilization of Water"). L. R. Koller (*J. Applied Physics* **10**:629, 1939) found that while sterilization of glassware and dishes is possible by means of ultraviolet radiation it was very important to start with fairly clean surfaces. Practically the same results are reported in a recent investigation by J. W. Appling and F. W. Tanner on the "Bactericidal Effect of Ultraviolet Rays on Micro-Organisms on Restaurant Glassware" (*Proc. Soc. Exper. Biol. & Med.* **47**:51, 1941). While they noted decided improvement on irradiation, complete sterilization did not result in every case. In this connection reference is made to an editorial on "Disinfection by Light" (*Brit. M. J.* **2**:707 [Nov. 23] 1940) showing that much remains to be done in studying the capacity of such lamps to reduce the dangerous bacterial content of air, not only under controlled laboratory conditions, but also in the more difficult and varied circumstances of practical use.

In this connection it is important to note that in order to kill a micro-organism a direct hit by ultraviolet rays of sufficient intensity is required. This is difficult to accomplish on the edge of a drinking cup, also in a liquid containing suspended matter or in air laden with dust particles that shield the organism. To provide adequate sterilization a germicide must effect practically 100 per cent killing. Ultraviolet germicidal rays cannot penetrate deeply and hence may be absorbed by finger marks, saliva, cosmetics or other contamination on a drinking cup. The ultraviolet germicidal lamp, therefore, appears to be an uncertain means of sterilizing solid objects (drinking cups, combs, brushes, shaving utensils, shoes, toilet seats) even if irradiation of the whole surface is possible.

At this time satisfactory evidence is not available to warrant acceptance of ultraviolet lamps by the Council for disinfecting solids. Furthermore, the Council is not fully convinced at the present time that it should assume the responsibility in this matter. The whole subject is too new, too complex and apparently too uncertain where virulent organisms (e. g., typhoid) may be concerned in spreading epidemics.

Some evidence seems to indicate that the ultraviolet germicidal lamp can be used for sterilizing water, beverages and the like but only after adequate removal of suspended material; and it is applicable only to liquids which are highly transparent to ultraviolet germicidal radiation.

In a few cases in which chemical methods of sterilization of water may be harmful, as for example for surgical purposes (mentioned by Ellis and Wells), under certain conditions irradiation with ultraviolet lamps is reported to be useful. This acceptance is not concerned with such applications, which do not appear to be very wide. Moreover, it is not clear wherein sterilization by ultraviolet rays is superior to boiling or distillation of the water used.

The use of ultraviolet radiation for disinfecting air in industrial plants, barracks, school rooms, assembly halls, refrigerators and so on also appears to be outside the Council's purview. In fact, at this juncture the whole question of the use of ultraviolet radiation for disinfecting purposes is too complex and too little understood for the Council to do more than attempt to keep the medical profession informed regarding particular ultraviolet lamps that are acceptable for use in this method of disinfecting air in hospitals, nurseries and operating rooms (relatively free from dust) as practiced by present day empirical methods.

TENTATIVE REQUIREMENTS FOR ACCEPTANCE OF ULTRAVIOLET LAMPS FOR DISINFECTING AIR

Clinical evidence submitted to the Council shows that under properly controlled conditions killing of air borne micro-organisms by ultraviolet rays may be used to supplement other methods of disinfecting air for prevention of cross infection in contagious wards in nurseries and hospitals, and for reducing air borne infection of wounds in operating rooms. The deleterious effects of ozone generated by ultraviolet lamps is recognized. The Council therefore requires for acceptability of ultraviolet disinfecting lamps that, under suitable ventilation, in the space near the occupants of the room the concentration of ozone shall not exceed one part in ten million. However, in view of the recent researches by Witheridge and Yaglou[2] showing that a much lower concentration (1 part in 25 million) is irritating to the mucous membranes of the upper respiratory tract, this specification of 1 part in 10 million is tentative awaiting confirmation of the evidence that a lower concentration of ozone is desirable in nurseries and hospital rooms occupied twenty-four hours a day. If the odor of ozone is distinctly perceptible the Council recommends increased ventilation.

In considering ultraviolet generators for disinfecting purposes the Council makes no distinction between lamps for use in air conditioning ducts and lamps for use in open rooms in which there is only a slow circulation of air. In both cases a sufficient number of lamps must be provided to insure adequate disinfection of the air as determined by approved culture tests or other accepted procedures. So that an ultraviolet output above the minimum value for adequate disinfection may be maintained, the Council recommends that the ultraviolet intensity of each lamp unit be measured at least once a month.

To comply with the Council's requirements the ultraviolet spectral energy distribution of the disinfecting lamp shall be comparable in lethal effectiveness with the low vapor pressure mercury discharge tube, in which the dominant radiation is of wavelength 2,537A.

The minimum intensity at right angles to and at a distance of 1 meter from the plane of the lamp tube in its fixture shall not be less than the germicidal equivalent of 20 microwatts per square centimeter of homogeneous radiation of wavelength 2,537A. The useful life of the lamp shall not be less than four thousand hours. During this period the ultraviolet output shall not fall below the herein specified minimum intensity. To meet this requirement the lamp may be provided with a voltage regulator to compensate for the decrease in intensity of ultraviolet with usage; or the lamp may emit a sufficient excess of ultraviolet radiation when new, so that the output shall not fall below the specified minimum value (20μW/cm.^{2} at 1 m.) in less than four thousand hours' operation. In either case the installation shall be provided with adequate safeguards against overexposure of the occupants of the room to ultraviolet radiation. The burner of the lamp shall be of glass or of suitably filter jacketed quartz, highly transparent to the emission line at 2,537A, and opaque to radiation of wavelengths shorter than 2,200A, to prevent the generation of an injurious amount of ozone, largely produced by these short wavelengths. To insure compliance with these requirements the lamp may consist of one, two or three tubes, mounted and operated as a unit.

For consideration of acceptance by the Council, the manufacturer shall submit a lamp unit in its fixture, permanently marked as to its useful life, and its radiant flux in microwatts per square centimeter of wavelength 2,537A, at 1 meter under the normal power input used to insure a useful life of four thousand hours or more. In addition the manufacturer shall submit satisfactory clinical evidence, obtained over a period of not less than four winter months, of the effectiveness of an installation of such lamps in maintaining sterilized conditions in the space (hospital, nursery) subjected to radiant disinfection. For statistical purposes in improving installations, included in this evidence (for the present at least) is to be a statement of (1) the size of the room and the average number of occupants (and their ailments), (2) the number and arrangement of the lamp units, (3) kind and amount of ventilation and (4) the procedure to determine and maintain the intensity above the minimum level during the useful life of the lamp.

2. Witheridge, W. N., and Yaglou, C. P.: Tr. Am. Soc. Heat. & Ventl. Eng. **45**: 509, 1939.

THE COUNCIL ON PHYSICAL THERAPY HAS AUTHORIZED PUBLICATION OF THE FOLLOWING REPORT. HOWARD A. CARTER, Secretary.

SUN-KRAFT LAMP
(Sunlamp)
NOT ACCEPTABLE

Manufacturer: Sun-Kraft Company, Inc., 1809 North Ashland Avenue, Chicago.

During recent months a great many inquiries regarding the Sun-Kraft Lamp have come to the Council on Physical Therapy, and the Council considered it advisable to prepare a statement of its opinion of the lamp for the information of the profession and the public.

It is apparent both from the description of the unit in the advertising pamphlets and from tests on the lamp that the characteristics of the radiation emitted by the burner would not meet the Council's requirements for acceptance of sunlamps. According to the advertising statements, "As its quartz tube does not generate any heat whatever . . ." and "Uses only 20 watts electricity," the burner is obviously of the so-called "cold quartz" or high voltage, low pressure variety, of which at least 95 per cent of all the radiant energy output in the ultraviolet region is of the 2,537 angstrom band. An acceptable sunlamp should be free of these radiations, or, in other words, its ultraviolet radiation output shall not differ essentially from that of the natural sun.

The Council examined the Sun-Kraft Lamp and reviewed radiometric measurements made on it by a reliable laboratory. The spectral quality and total intensity do not meet the Council's requirements for acceptability as a "sun lamp."

Furthermore, statements in the advertising indicate that the device must be operated at a distance of less than 6 inches; thus, the lamp cannot be very powerful. If much ozone (greater than 1 part in 25 million) is developed near the patient it will cause irritation of the upper respiratory tract because of its high toxicity.

Many unwarranted therapeutic claims are made for the lamp. "Sun-Kraft, A Promoter and Preserver of Good Health" is a headline taken from one of the advertising pamphlets. Following are unsubstantiated, unacceptable claims made in the copy:

Relieves Dandruff

Sun-Kraft generated ultraviolet eliminates itchy dandruff, checks excessive loss of hair. Regular use will induce new hair growths and restore natural hair-color and health by increasing scalp circulation and rejuvenating hair glands.

Increases Resistance to Colds

Six-minute exposure, twice weekly, to Sun-Kraft ultraviolet promotes generous production of Vitamin D in the body . . . thus increases resistance to colds. . . .

Gives Positive Antisepsis

For positive antiseptic action in treating cuts, wounds, bruises, Sun-Kraft Ultraviolet disinfects completely in one minute! In addition, it induces quick healing. Its benevolent rays will clear up Athlete's Foot, acne, pimples, psoriasis and blackheads in a few treatments . . . produce lasting relief from pains caused by arthritis, lumbago and rheumatism.

The outstanding effects are:

. . . increase of self-disinfecting and protective power of the skin.
Activation of the general body defense mechanisms against disease.
Normalization of the mineral metabolism of the body.
Lowering of blood pressure and increasing blood circulation.

In the opinion of the Council the foregoing statements, for which there is no substantiating scientific evidence that the Sun-Kraft Lamps will do these things, lead to a false sense of security on the part of the user of the apparatus and thus are regarded misleading.

The Council on Physical Therapy voted to declare the Sun-Kraft Lamp unacceptable for inclusion in its list of accepted devices because the characteristics of the radiation emitted by the lamp do not meet the Council's requirements for a sun lamp sold to the public and because of the unwarranted therapeutic claims made for the lamps.

Council on Pharmacy and Chemistry

NEW AND NONOFFICIAL REMEDIES

THE FOLLOWING ADDITIONAL ARTICLES HAVE BEEN ACCEPTED AS CONFORMING TO THE RULES OF THE COUNCIL ON PHARMACY AND CHEMISTRY OF THE AMERICAN MEDICAL ASSOCIATION FOR ADMISSION TO NEW AND NONOFFICIAL REMEDIES. A COPY OF THE RULES ON WHICH THE COUNCIL BASES ITS ACTION WILL BE SENT ON APPLICATION.

AUSTIN E. SMITH, M.D., Secretary.

NEO-SYNEPHRINE HYDROCHLORIDE (See New and Nonofficial Remedies, 1942, p. 249).

The following dosage forms have been accepted:

FREDERICK STEARNS & COMPANY, DETROIT

Neo-Synephrine Hydrochloride Emulsion 1%: 15 cc. bottle. Neo-synephrine hydrochloride 1 per cent, sodium benzoate 0.4 per cent in a mineral oil and water emulsion containing acacia; preserved with chlorobutanol 0.5 per cent.

Neo-Synephrine Hydrochloride Emulsion 10%: 3 cc. bottle. Neo-synephrine hydrochloride 10 per cent, sodium benzoate 0.4 per cent in a mineral oil and water emulsion containing acacia; preserved with ascorbic acid 1.0 per cent, sodium bisulfite 0.1 per cent and chlorobutanol 0.5 per cent.

ESTRONE (THEELIN) (See New and Nonofficial Remedies, 1942, p. 377).

The following dosage forms have been accepted:

ABBOTT LABORATORIES, NORTH CHICAGO, ILL.

Ampoules Estrone Suspension: 2 mg. in 1 cc. (20,000 I. U.). Each cubic centimeter contains estrone crystals 2 mg. in aqueous suspension with gum acacia.

PARKE, DAVIS & CO., DETROIT

Ampoule Theelin Aqueous Suspension: 2 mg. per cc. (20,000 I. U.).

Ampoule Theelin in Peanut Oil: 1 cc. (5,000 I. U.). Each cubic centimeter contains 0.5 mg. of theelin.

HALIBUT LIVER OIL (See New and Nonofficial Remedies, 1942, p. 577).

The following dosage form has been accepted:

THE UPJOHN COMPANY, KALAMAZOO, MICH.

Capsules Halibut Liver Oil: 3 minims. Each capsule has a potency of not less than 10,000 U. S. P. units of vitamin A and not less than 170 U. S. P. units of vitamin D.

MENADIONE (See New and Nonofficial Remedies, 1942, p. 584).

The following dosage form has been accepted:

SCHIEFFELIN & COMPANY, NEW YORK

Menadione (in sesame oil) 1 mg. per cc.: 10 cc vials. Each cubic centimeter contains 1 mg. menadione.

SODIUM CITRATE (See New and Nonofficial Remedies, 1942, p. 427).

The following dosage form has been accepted:

GEORGE A. BREON & COMPANY, INC., KANSAS CITY, MO.

Ampul Solution Sodium Citrate 2½% W/V: 50 cc. A sterile solution containing in each cubic centimeter sodium citrate-U. S. P. 0.025 Gm. (0.38 grain).

SULFATHIAZOLE (See New and Nonofficial Remedies, 1942, p. 150).

The following dosage forms have been accepted:

PITMAN-MOORE COMPANY, INDIANAPOLIS

Tablets Sulfathiazole: 0.5 Gm.

Children's Tablets Sulfathiazole: 0.25 Gm.

DEXTROSE (See New and Nonofficial Remedies, 1942, p. 418).

The following dosage form has been accepted:

JOHN WYETH & BROTHER, INC., PHILADELPHIA

Dextrose Injection, 50% W/V, U. S. P.: 50 cc. and 100 cc. Each 10 cc. contains 5 Gm. of dextrose in distilled water.

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SATURDAY, JUNE 19, 1943

THE ANNUAL SESSION IN 1943

Owing to the exigencies of the war, the annual session of the American Medical Association for 1943 was limited to a meeting of the delegates and to two general meetings, which were held in Chicago from June 7 to June 9 inclusive. As will be observed from the Proceedings, publication of which is begun elsewhere in this issue, the attendance of the House of Delegates included representatives from every state and from all the territorial areas of the United States except Alaska, the Philippine Islands, the Panama Canal Zone and Puerto Rico. There was a full representation of delegates from the sections. The House of Delegates was concerned chiefly with a consideration of the reports of the officers, the Board of Trustees and the various Councils and Special Committees and with acting on these reports. The progress of the Association has been excellent. Notwithstanding the loss of a considerable number of employees from the headquarters office, all of the Bureaus and special functions of the Association have been conducted at the top of their effort and have in many instances included extraordinary duties occasioned by the war.

Among the problems presented to the House of Delegates, special attention should be called to two exhaustive reports presented by Special Committees of the Board of Trustees, dealing with the rendering of medical service in connection with prepayment plans for hospital service and also with the relationship of certain special types of service, such as those of the roentgenologist, the clinical pathologist and the anesthetist to general medical service in hospitals. The general purport of the actions taken was to recognize that conditions vary in each area with regard to such relationships and that adjustments might best be made in each area according to the special conditions that may prevail.

Another action taken by the House of Delegates of the greatest possible significance to the future of American medicine was the establishment of a Council on Medical Service and Public Relations and of a Committee on the Planning of Postwar Medical Service. Before the time of the annual session the Board of Trustees had already established temporarily a Committee on the Planning of Postwar Medical Service in accordance with a request made by the President, Dr. James E. Paullin. The House of Delegates approved this activity and recommended its establishment on a permanent basis.

This committee includes Dr. Roger I. Lee of Boston, chairman; Brig. Gen. Fred W. Rankin; Dr. Francis G. Blake of New Haven, Conn.; Dr. James E. Paullin of Atlanta, Ga.; Dr. Harrison H. Shoulders of Nashville, Tenn.; Dr. Alan Gregg, medical director of the Rockefeller Foundation, New York; Capt. William J. C. Agnew, United States Navy, Washington, D. C., and Dr. Warren F. Draper, Assistant Surgeon General, Public Health Service, Washington, D. C. It is hoped that this committee will conduct conferences and negotiations with similar committees of many other organizations which are similarly concerned with preparing for the innumerable problems likely to arise in the postwar period.

Before the annual session, as a result largely of suggestions made at the National Conference on Medical Service, agitation had begun for the establishment of a headquarters office for the Association in Washington, to be concerned largely with the collection of information and activities related to legislation and for the establishment of various councils which would be concerned with the management of such an office and with the development of plans for medical service. The proposal had been worked out in much detail. As a result of this agitation, action had been taken by several state medical societies endorsing the proposal and by other state medical societies for various modifications of these plans. Six or more resolutions were introduced into the House of Delegates along such lines. The House of Delegates voted by a large majority against the establishment of a Washington office. Eventually the reference committee brought in a report establishing a Council on Medical Service and Public Relations, which shall have as its functions:

1. To make available facts, data and medical opinions with respect to timely and adequate rendition of medical care to the American people.

2. To inform the constituent associations and component societies of proposed changes affecting medical care in the nations.

3. To inform constituent associations and component societies regarding the activities of the Council.

4. To investigate matters pertaining to the economic, social and similar aspects of medical care for all the people.

5. To study and suggest means for the distribution of medical services to the public consistent with the principles adopted by the House of Delegates.

6. To develop and assist committees on medical service and public relations originating within the constituent associations and component societies of the American Medical Association.

In the exercise of its functions, the Council, with the cooperation of the Board of Trustees, will utilize the functions and personnel of the Bureau of Legal Medicine and Legislation, the Bureau of Medical Economics and the Department of Public Relations in the headquarters office of the American Medical Association in Chicago.

The resolution provided that this Council shall include the President, the immediate past President and the Secretary of the Association and one member of the Board of Trustees and six members who shall for the first year be appointed by the Board of Trustees. Thereafter two members are to be elected for one year, two for two years and two for three years, the nominations for these positions to be submitted by the Board of Trustees to the House of Delegates. Immediately after the annual session the Board of Trustees selected its members for the present year, so that the new Council will now include Dr. Louis H. Bauer of Hempstead, L. I.; Dr. John H. Fitzgibbon of Portland, Ore.; Dr. Alfred W. Adson of Rochester, Minn.; Dr. James R. McVay of Kansas City, Mo.; Dr. E. J. McCormick of Toledo, Ohio; Dr. W. S. Leathers of Nashville, Tenn.; Brig. Gen. Fred W. Rankin, retiring President; Dr. James E. Paullin of Atlanta, Ga., President; Dr. Olin West of Chicago, Secretary, and Dr. Roger I. Lee of Boston, Chairman of the Board of Trustees. No doubt the Council on Medical Service and Public Relations will soon be convened to consider many pressing problems now pending in the field with which it is concerned.

On June 7 the House of Delegates was entertained at dinner by the Board of Trustees, the speaker being Charles H. Merriam, professor of political science at the University of Chicago. He is a member of the National Resources Planning Board, and he described to the delegates the report of that board. At the general meeting on June 8 Brig. Gen. Fred W. Rankin, the retiring President, presided, Dr. James E. Paullin gave the President's Address, published in THE JOURNAL last week, and the Distinguished Service Medal was conferred on Dr. Elliott P. Joslin, as reported elsewhere in this issue.

The delegates, having previously chosen to convene in New York in 1944 and in St. Louis in 1945, selected San Francisco for 1946. These designations are, of course, subject to the final action of the Board of Trustees and dependent on the special conditions created by the war.

JACKSON MEMORIAL LABORATORY TO BREED RATS, MICE, RABBITS AND GUINEA PIGS FOR RESEARCH PURPOSES

For more than ten years the Roscoe B. Jackson Memorial Laboratory of Bar Harbor, Maine, has been producing a surplus of mice in connection with its experimental work on cancer and genetics. These mice have been sold to medical and scientific laboratories throughout the United States. They and their descendants form today the basis for much of the work in experimental medicine which utilizes this type of animal. The funds derived from the sale of these animals are turned directly back into the research work. In the absence of an endowment the program of the laboratory is greatly aided by this source of funds.

Some time ago the National Research Council appointed a committee to consider the demand for controlled genetic material of various types in plants and animals used in scientific and medical work. At about the same time the Jackson laboratory received as a gift from Mr. and Mrs. William Pierson Hamilton a farm and buildings which, with some alteration, will make an ideal place for the production of other laboratory mammals such as rats, guinea pigs and rabbits. The laboratory had not previously been able to extend its own research work to include the study of these forms but desired to do so.

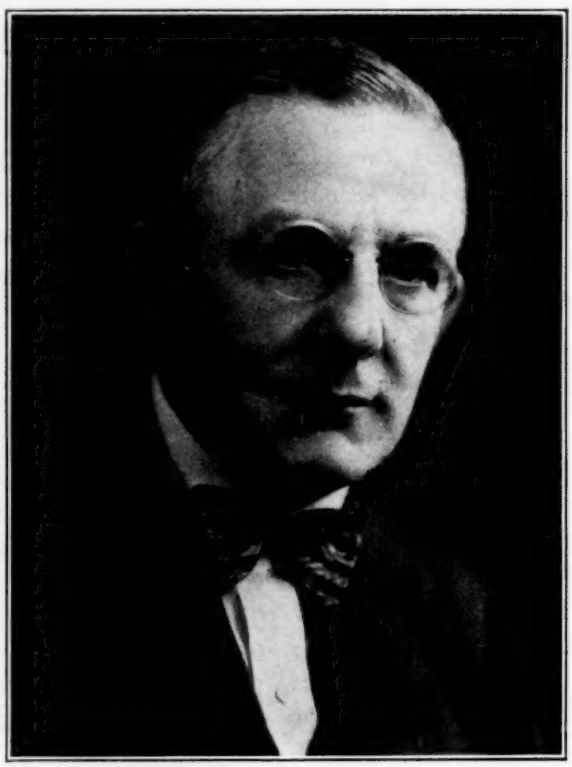
Recently the Rockefeller Foundation, recognizing the need for control of genetic material, frankly viewing the whole situation as experimental, made a grant of $35,000 to the Jackson Memorial Laboratory to assist in the purchase of equipment and in the maintenance of animal material in the start of a program of inbreeding genetic strains of rats, rabbits and guinea pigs. These animals will be studied genetically as the work progresses just as the mice have been in the past, and all surplus from the start of the experiments will be available for sale to other institutions. The cooperative attitude of the laboratory to provide material for other investigations and of other investigators to purchase this material so that the laboratory may continue its own work is one which should appeal to all those who desire to obtain results of the most value to the greatest number of people with the least possible waste of time and resources.

The director of the Jackson laboratory states that it will be glad to conduct correspondence with investiga-

tors or executives at any medical school or scientific institution with a view to their needs for experimental laboratory mammals over a long period of time so that, if it seems desirable and possible, arrangement for production and supply of these animals can be made.

THE PRESIDENT-ELECT—HERMAN KRETSCHMER

Herman Louis Kretschmer of Chicago was elected President-Elect of the American Medical Association at the annual session in Chicago, June 9, by unanimous action of the House of Delegates. Dr. Kretschmer was born in Chicago on April 22, 1879. He received the degree of doctor of medicine from Northwestern University Medical School in 1904, from which date he has devoted himself continuously to the advancement of his chosen profession. He became urologist of the Presbyterian Hospital, attending urologist to the Children's Memorial Hospital and clinical professor of surgery in Rush Medical College. From the beginning of his career he became associated with practically all organizations in his specialty, serving as president of the American Board of Urology, chairman and secretary of the Section on Urology of the American Medical Association, president of the American Urological Association, president of the American Association of Genito-Urinary Surgeons and president of the Clinical Society of Genito-Urinary Surgeons. His leadership was also recognized by membership in the International Society of Urologists and election to corresponding membership in the German and Hungarian urologic associations. In 1931 he was president of the Chicago Medical Society and served for some years as a member of its council. For more than ten years he devoted himself in the American Medical Association to his work as treasurer, sitting regularly with the Board of Trustees and giving invaluable advice in the field of investments. He is a fellow of the American College of Surgeons and of the American Radium Society. In 1942 he was cited by Northwestern University School of Medicine as one of its distinguished alumni. His election to the presidency is a recognition of service and of much time and wisdom given to the affairs of the Association.



HERMAN LOUIS KRETSCHMER, M.D.
PRESIDENT-ELECT OF THE AMERICAN MEDICAL ASSOCIATION

MEDICAL PROBLEMS OF TANK WARFARE

Mechanized warfare is fought today with increased speed and power. Col. Daniel L. Borden's [1] study of the medical problems of tank warfare will help medical officers appreciate these changes. A modern tank is a mobile, concentrated source of fire power. Since the first appearance of the tank in World War I on Sept. 15, 1916 the slow tread of 4 miles an hour has been increased to 30 miles an hour; fire power has also increased. The all metal body encloses a high speed engine, ammunition, grenades, bombs, Verey cartridges, batteries, radio, firearms, fuel oil and an alcohol compass in close proximity to the human crew. Special training is required to render efficient medical service to the personnel of tank battalions. Tank fighters must be youthful, aggressive, courageous, tough; they must not be tall, too heavy or sensitive to dust nor have a tendency toward claustrophobia.

The elimination of flat surfaces and angles in tanks favors the richocheting of projectiles and makes a disabled tank a target of great danger to soldiers who seek shelter nearby. One third of the battle casualties in tank crews in the Middle East with the British occurred outside the tank when men were caught seeking shelter near a disabled tank.

Although excessive heat in tanks is a serious medical problem, the British in the Middle East have reported few cases of heat exhaustion; if possible, tank crews should not be subjected to more than one week of active fighting. Burns constitute from 27 to 30 per cent of the British tank casualties. The crew, particularly the commanders, occasionally protrude their heads out of the turrets and so become exposed to gun fire. Temporary sound deafness results from the roar of engine and tank, aggravated by gun fire within a resounding compartment. The surgeon of the armored forces at Fort Knox, Col. A. L. Gorby, reported that in training there were surprisingly few injuries, the most frequent being the loss of the distal phalanges of the fingers due to slamming of the heavy tank doors, a hazard that has been largely eliminated in the newer tanks. Contusions of the chest and abdomen occur due to sudden stopping at the bottom of a ditch or against a trap. Occasionally

1. Borden, Daniel L.: Casualties and Medical Problems of Tank Warfare, M. Ann. District of Columbia **12**: 43 (Feb.) 1943.

a small tree which failed to be knocked down by the tank enters through a porthole and injures the crew. Head injuries result from slipping on muddy tanks while mounting or dismounting. Gunshot wounds may occur in tanks as the result of dropping ammunition. Fatalities occasionally occur when a tank turns over, pinning a soldier in the turret or beneath the tread.

The evacuation of wounded from tanks has been the subject of extensive research. The American Armored Forces Board has rejected the British sling method of removing disabled men from tanks. When immediate action is necessary, the wounded are often pulled out by tying feet together and hauling away. A badly injured man may be given the contents of a small ampule of chloroform to inhale until he is unconscious, in order that he may be removed from the tank without pain and with lessened shock. Our army also employs the pistol-belt-suspender method, one belt being slipped under the armpits, tightened and used as a sling, and a second belt carried between the back of the sling and the man's body, thus making a hoist device. Other methods of removing the disabled from tanks are being studied. The evacuation of wounded from tanks remains, however, a problem to be solved by any method that will accomplish the purpose under the circumstances.

Another difficult task is that of maintaining medical contact between swiftly moving motorized groups. The battalion surgeon must have at his command a radio-directed armored car or a half-track protected ambulance; and a clearing station, where provision can be made by returning wounded men in airplanes to their base, must be available. The medical department obviously must do more than care for the sick; its training must provide instruction in methods of communication, motor maintenance, identification of hostile aircraft and map reading. The medical officer serving with tank forces must be prepared to be a mechanic with a crowbar for his instrument of approach and a soldier to face shells and bombs, as well as a physician.

TUMOR ENZYMOLOGY

The metabolism of normal tissues is carried on by enzymic catalysis of definite patterns. These patterns may be disturbed by various causes, e. g. nutritional deficiencies, toxic actions and tumors. In the biochemical approach to the cancer problem tumor enzymology[1] is receiving closer and closer systematic attention. Comparisons are made of the enzymic activities of neoplastic, mostly cancerous, tissue and of the normal tissues of origin; also of enzymic processes of normal animals and of tumor-bearing animals.

Greenstein,[2] in a comprehensive review of work on tumor enzymology, emphasizes that "no simple generalization covers the enzymatic behavior of all or any one group of tumors," certain statements to the contrary notwithstanding. The range of enzymic activity in hepatoma, in lymphoma and in mammary and other tumors in mice on the whole is narrower than in the normal tissues of the sites of origin of these tumors, owing, it may be, to loss in specific function as the normal tissue becomes involved in tumor growth. The interesting question of acid phosphatase activity in normal prostatic tissue as compared with that of primary prostatic carcinoma invites further study. Undoubtedly in time facts will be accumulated on the basis of which generalizations can be made.

Studies of remote and systemic effects on enzymes by tumor growth have given more definite results, but this work is also in the stage of detailed observation. The evidence at hand does not justify any serious attempt at explaining just how such effects are produced. In tumor-bearing animals, tissues far removed from the tumor have shown profound changes from the normal in certain enzyme systems. For instance catalase, which has been studied most, is nearly always reduced below normal in the liver and kidney in mice and rats with various types of tumors elsewhere. Greenstein recalls that low catalase values have been found in the liver after death from various forms of human cancer. The remote effects of tumor growth on catalase and also other enzymes keep step with the ups and downs in the growth of the tumor, and on the removal or regression of the tumor the catalase content returns to normal. In other words, the effect in question is related directly to the presence of the tumor.

The many attempts to find a general test for cancer based on changes in the blood in the disease have not met with practical success, but objective studies of the blood in cancer are yielding results of scientific as well as clinical value. Greenstein mentions particularly the decrease of serum esterase and lipase activity in tumors of different species, the rise in serum phosphatase, particularly the acid form, in prostatic carcinoma, which is of such special interest these days, and finally the progressive loss of hemoglobin in the course of various animal tumors. Whether the anemic states in human cancer are dependent on the lowering of catalase and of the hemoglobin level as in animals remains to be determined. In connection with the significance of changes in the blood in cancer it is of particular interest to note that serial phosphatase tests of the serum are now essential in the diagnosis and treatment of carcinoma of the prostate.[3]

The study of the enzymatic phenomena of neoplastic growth has bearings on fundamental as well as practical

1. Voegtlin, Carl: Biochemistry of Malignant Tissue, Physiol. Rev. **17**: 92 (Jan.) 1937; Trends in Cancer Research, J. Nat. Cancer Inst. **2**: 309 (Feb.) 1942.

2. Greenstein, J. P.: J. Nat. Cancer Inst. **3**: 419 (Feb.) 1943.

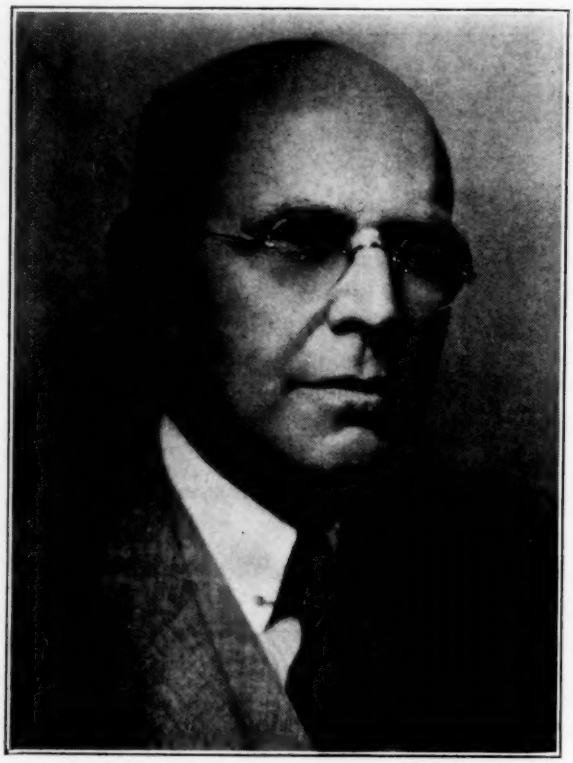
3. Huggins, Charles: The Diagnosis of Cancer of the Prostate Including the Interpretation of Serum Phosphatase Values, Bull. New York Acad. Med. **19**: 195 (March) 1943.

cancer problems. The fact that well defined effects are demonstrable in tissues far from the site of a primary cancer raises the question whether cancer is a general rather than a local disease.

Current Comment

THE DISTINGUISHED SERVICE AWARD TO JOSLIN

The Distinguished Service Medal and Award of the American Medical Association for 1943 were conferred on Dr. Elliott Proctor Joslin, world famous as a contributor to our knowledge of diabetes and as an educator in that field. Dr. Joslin was born in Oxford, Mass., June 6, 1869. Following the receipt of the B.A. degree from Yale in 1890 and the Ph.B. from the Sheffield Scientific School in 1891 he was graduated as a doctor of medicine by Harvard in 1895. In 1914 he received the honorary M.A. from Yale and in 1940 the honorary D.Sc. from Harvard. In 1895 he began the practice of medicine in Boston, at the same time serving as an educator in Harvard Medical School, becoming assistant in physiologic chemistry from 1898 to 1900, assistant in theory and practice of physic from 1900 to 1905, instructor from 1905 to 1912, assistant professor of the theory and practice of physic from 1912 to 1921, clinical professor of medicine from 1922 to 1937 and since that time emeritus professor. He has been at the same time consulting physician of the City Hospital and medical director of the George F. Baker Clinic in the New England Deaconess Hospital. During World War I he entered as a major in the medical corps in 1918 and was promoted shortly to lieutenant colonel. He is a member of the Association of American Physicians, the American Academy of Arts and Sciences, the American Physiological Society and other scientific organizations. He was chairman of the Section on Practice of Medicine of the American Medical Association in 1924-25 and president of the Interstate Postgraduate Medical Association in 1936. He is honorary president of the American Diabetes Association. Various important lectures such as the Stephen Walter Ranson Lecture of Northwestern University School of Medicine in 1937, the Harvey Society Lecture in Boston in 1930 and the two Malthe lectures and a clinic in Oslo in 1938 mark his career. From time to time he has traveled throughout the nation extending education about diabetes to the medical profession and to the public. On patients who have survived diabetes for various periods of time he confers bronze, silver or gold medals, recently having conferred such a medal on a woman who had diabetes for more than fifty years. In 1932 Dr. Joslin received the Kober Medal of the Association of American Physicians. As a part of his contribution to education in his field he published in 1916 the first edition of "The Treatment of Diabetes Mellitus," now in its seventh edition; also "A Diabetic Manual" in 1918, which is now in its seventh edition. His publications include more than one hundred smaller contributions to medical literature in his field. The award to Dr. Joslin of this great honor adds further to the distinguished list of those already recognized, which now includes Dr. Rudolph Matas in 1938, Dr. James B. Herrick in 1939, Dr. Chevalier Jackson in 1940, Dr. James Ewing in 1941 and Dr. Ludvig Hektoen in 1942.



ELLIOTT PROCTOR JOSLIN, M.D.
AWARDED DISTINGUISHED SERVICE MEDAL

CENSORSHIP OF MEDICAL PERIODICALS

A letter from the Office of Censorship in Washington requests the editor of THE JOURNAL to call the attention of editors of state medical journals and of bulletins of county medical societies particularly and also editors of all other medical publications to the fact that it is exceedingly inadvisable to publish uncensored letters coming from doctors in the service, particularly when they include the addresses of the physicians. Already in several instances such letters have served to reveal the identity of troops overseas. The Code of Wartime Practices for the American Press calls attention to the great danger that is inherent in this practice. All publications are particularly requested to avoid identification of soldiers with their troop units when they are overseas, about to embark or on defense (as distinguished from training) activities in the United States. In the case of Naval personnel the identification of ships and bases is to be especially avoided. Editors of all publications will, we are sure, do their utmost to cooperate with the Office of Censorship in Washington, since the revealing of units to which physicians are attached may be of great value to the enemy in determining the character of the armed force with which it has to deal. When in doubt, editors will do well to get a direct response from the Office of Censorship regarding the release of any special item.

MEDICINE AND THE WAR

In this section of The Journal each week will appear official notices by the Committee on War Participation of the American Medical Association, announcements by the Surgeon Generals of the Army, Navy and Public Health Service, and other governmental agencies dealing with medicine and the war and such other information and announcements as will be useful to the medical profession.

FUEL RATIONING AND PUBLIC HEALTH

JOEL DEAN
Director, Fuel Rationing Division, Office of Price Administration
Washington, D. C.

When it became clear that fuel oil would be rationed in a majority of the states, grave concern was felt for the effect on the public health. Many and dire were the prophecies of epidemics of communicable disease and of deaths from pneumonia, influenza and other respiratory ailments, and of resulting breakdown of public morale. A study of the medical aspect of fuel rationing was conducted by Bristol,[1] and the findings were used as a basis of ration order 11[2] (fuel oil), which became effective Oct. 22, 1942.

In that report a careful distinction was made between a "minimum standard" which would not jeopardize health for persons in normal physical condition and the "comfort zone" which physicians, engineers and public health workers interested in the subject of indoor heating and ventilation had become accustomed to think of as indicative of ideal combinations of room temperature and relative humidity. Necessarily the fuel oil regulations embodied in ration order 11 were directed to maintenance of the "minimum standard." The report also distinguished categories of persons who could not be subjected even to this "minimum standard." The regulations consequently recognized infancy, sickness and infirmity as reasons for additional fuel rations.

From time to time, especially during the first two or three months, alarming reports of illness, epidemic and death reached the national office. Every such case was investigated promptly in order to provide immediate relief if needed. No single case of death due to fuel oil rationing directly or indirectly has been substantiated nor any epidemic unearthed that could be laid to fuel oil rationing. In almost every report of sickness or other hardship, investigation showed either that relief had already been afforded through action of the local war price and rationing board or that the condition had been grossly exaggerated.

Typical of these exaggerated reports was an anonymous telegram stating that children were dying of pneumonia in a tenement of the capital city because of lack of fuel oil. This telegram was referred to the Fuel Rationing Division, and an investigation was made in cooperation with police and public welfare agencies. An infant son of one of the tenants had died of pneumonia in the hospital a few days earlier. No other case of pneumonia existed among the occupants of the building, infant or adult. Fuel oil was not used and never had been used to heat the premises. Another typical case was a telegram received toward the close of the day from a householder in northern New England alleging that several sick members of the family were in imminent danger of death because they had no fuel oil and the local board had not issued a ration for the premises. Immediate investigation revealed that the ration had been issued already by the local board and had reached the complainant within an hour of dispatching the telegram, that delivery of fuel oil had been made a couple of hours later, and that no member of the household was dangerously or even seriously ill.

Notwithstanding our growing disillusionment, we never permitted ourselves to relax our vigilance, and every reported case was investigated promptly and thoroughly. With a program operative in thirty-three states and the District of Columbia, and administered by thousands of local officials, it was inevitable that some genuine cases appeared, and even a few that had been badly handled. The percentage of these was so small, however, that the conclusion we reached in the Fuel Rationing Division was that no real detriment to public health had resulted from ration order 11.

We felt nevertheless that, before entering on the second heating season under fuel rationing, this conclusion should be checked against the experience of public health authorities throughout the rationed area. On Feb. 23, 1943, therefore, I addressed a letter to representative health officers requesting information (1) as to how fuel oil rationing had affected public health and (2) as to what changes in the regulations were recommended from that point of view and (3) as to whether a general conference of public health officials should be convened to discuss revision of the rationing plan. Replies were received from city, county and state officers of nineteen states and the District of Columbia.

Significantly, the fourteen states not represented in the replies are those which have had less severe weather and from which fewer hardship cases have been reported. It is a reasonable inference that failure to reply is equivalent to a statement that no serious impairment of public health was observed in those states. It is not the experience of the Fuel Rationing Division that it is usual to suffer in silence or to decline an express invitation to complain if there is anything to complain about.

The replies from the nineteen states and the District of Columbia, while frankly reporting some hardship cases and offering some adverse criticism, indicate clearly that, in the nearly unanimous judgment of the responding authorities, no impairment of public health resulted from rationing fuel oil, that ration order 11 needs only minor adjustment to satisfy all requirements of public health, and that such revision is not of sufficient gravity to warrant a general conference of public health officers.

Tabulation of the replies shows the following effects on public health:

DEATH

10 per cent reported deaths allegedly due to lack of fuel oil as cause or contributory circumstance but indicated that this was doubtful and had not been investigated.

25 per cent stated positively no such deaths had occurred.

65 per cent did not report any deaths.

ILLNESS

15 per cent reported considerable illness.

25 per cent reported some illness due to lack of fuel oil.

45 per cent stated positively that no illness had been caused by rationing fuel oil.

15 per cent stated that decreased household temperatures had improved public health.

EPIDEMIC

100 per cent did not report epidemic situations.

1. Bristol, Leverett D.: Medical and Public Health Aspects of Heating Oil Rationing, Am. Soc. Heating & Ventilating Engineers Journal, Section on Heating, October 1942.
2. OPA R-1115. Fuel Oil Rationing Regulations, Ration Order No. 11, title 32, National Defense, chapter XI, Office of Price Administration.

The incidence of fuel oil rationing was heaviest in New England and northern New York, owing to the greater severity of the winter there and the greater distance of that area from the source of supply. It was to be expected, therefore, that from this region would come the most adverse reports. Of Massachusetts one reply states that "there appears to have been an appreciable increase in the number of deaths directly attributable to the fuel shortage." In 1 instance in New York, a letter says, "it has been claimed that death occurred in the family due to an insufficient amount of fuel oil for heating purposes." Against these must be set the following two reports by health officers in the same area: 1. "We, in this department, and some of the voluntary health agencies, do not believe that fuel rationing, at least not directly, has affected the health of the community adversely." 2. "No deaths and no illnesses were caused by lack of heat insofar as we are able to determine."

Naturally the principle effects noted relate to respiratory ailments. The majority of all reports received state that there was no increase in the number of these that could be attributed to lack of fuel oil. In New Jersey the state department of health made a survey of local health units, and reports concerning them that "a few state that cases of illness, chiefly respiratory, have come to their attention in which the patient or family alleged that the lack of heat in homes was the cause or contributing factor." Such cases, the reports point out, were few in number, and they conclude "Only a very few complaints have been filed with us during the current winter regarding homes being poorly heated due to our present fuel oil shortage. In each instance our investigation disclosed that the complaints were not well founded as no acute distress or illness existed." Only two replies to my inquiry mentioned pneumonia. Both were from New York. One authority reported "Our pneumonia rate, though a little higher than for approximately the same period last winter, is below the five year average, and we know of no unusual incidence of colds and other respiratory affections commonly referred to as 'grippe.'" Another stated "During the month of January there had been a 30 per cent increase in the pneumonia death rate as compared with January 1942. There are so many factors entering into the increase that it would be impossible to say whether or not the fuel shortage had anything to do with it, but this seems to me to be rather doubtful."

Reports from the Southern and Middle Western states are that no illnesses or deaths in those regions were due to lack of fuel oil. No reply reported any epidemic anywhere.

The only point of difference between the conclusion we had already reached in the Fuel Rationing Division and the summary of these replies concerns the possibility that some deaths reported from Massachusetts and one death reported from New York may have been due to lack of fuel oil for heating purposes. Without full investigation the validity and degree of this difference cannot be determined accurately, but it is evident that such cases are highly exceptional and relatively few, even if they can be established.

A recent canvass by Bristol[3] of the physicians and health officers who assisted him in his original study indicates no general divergence of opinion from that expressed by the majority of health officers who replied to my letter.

In his original report, Bristol[1] said "The public should be made to understand that, by a reasonable amount of extra clothing, the body adjusts itself readily to temperatures at least 10 degrees below what we in the United States consider the standard temperature for dwelling houses. Experience of those in foreign countries attest this fact. Some medical and public health authorities have indicated that not only would it be safe but actually beneficial to keep temperatures quite a few degrees lower than the commonly accepted standard if additional clothing is worn." Public welfare workers assured us that in their experience small houses and apartments of people in the lower income brackets were frequently heated to an unhealthful temperature.

The Fuel Rationing Division was hopeful that over a long period of time the beneficial results of slightly lower indoor temperatures could be established[4] but did not anticipate that one year of fuel rationing would be sufficient to demonstrate it. It is an agreeable surprise, consequently, when a health officer writes from Missouri that "It is my opinion that public health has benefitted from fuel rationing in that the temperature of homes was reduced," and another health officer reports of a family in Virginia that they "had kept their house at 60 degrees for the second floor and 65 downstairs through the winter and had been both happier and more comfortable than they were when they had it much hotter the year before." It is also a proof of the underlying wisdom of Bristol's report and of the essential soundness of the fuel oil rationing plan.

3. Bristol, Leverett D.: Personal communication to the author.
4. Dean, Joel: Fuel Oil Rationing Protects Public Health, Am. J. Pub. Health **32**: 1341 (Dec.) 1942.

ARMY

THE OLIVER GENERAL HOSPITAL

The U. S. Army Oliver General Hospital at Augusta, Ga., was formally dedicated on April 18 and the forty minute program was broadcast over radio station WRDW. The commanding officer of the hospital, Col. Hew B. McMurdo, M. C., introduced the speakers, including Brig. Gen. R. H. Mills of the dental corps, who represented the Surgeon General, and Col. Sanford W. French, chief of the medical branch of the Fourth Service Command, and Hon. W. D. Page, mayor of Augusta. The guest of honor was Mrs. Robert T. Oliver, widow of the late Colonel Oliver, in whose honor the hospital was named. Colonel Oliver was chief dental surgeon of the A. E. F. in the first world war, after which he was elected president of the American Dental Association. General Mills presented Mrs. Oliver with a miniature of the Oliver General Hospital flag and a replica of the "Stars and Stripes," which emblems flew together from a staff mounted on a silver base and were a gift from the personnel of the hospital. Following the exercises, Colonel and Mrs. McMurdo held a reception for the guests and others present. This 1,500 bed army hospital is fitted and equipped to carry out general surgery, general medicine and physical therapy. The list of medical officers on the staff of the Oliver General Hospital as of May 10 was as follows:

Col. Hew B. McMurdo, commanding officer.
Col. George A. Stewart, chief of surgical service.
Lieut. Col. Paul C. Carter, medical inspector.
Lieut. Col. John F. Duckworth, executive officer.
Lieut. Col. Arthur N. Ferguson, chief of medical service.
Lieut. Col. Harold C. McDowell, orthopedics.
Lieut. Col. Tyler, J. Walker, chief of dental service.
Lieut. Col. Clifford C. Woods, assistant chief of surgical service.
Major Samuel E. Bilik, chief of physical therapy.
Major Isaac C. East, psychiatry.
Major Southard T. Flynn, urologist.
Major George Frumkes, chief of psychiatry.
Major Grover E. Murphy, chief of eye, ear, nose and throat service.
Major David H. Sprong Jr., surgical service.
Capt. Gregory N. Brown, chief of laboratory service.
Capt. Albert R. Buckelew, dental service.
Capt. Joseph M. Cordi, orthopedics.
Capt. Robert G. Diess, ophthalmology.
Capt. Jack S. Goltman, gastroenterologist.
Capt. Frank D. Hazlett, attending surgeon.
Capt. Edwin F. Merolla, pediatrics.
Capt. Louis T. McAloose, assistant urologist.
Capt. Herman Rudensky, chief of chest service.
Capt. Jack A. Rudolph, allergist and medical service.
Capt. Hans Seidemann, gynecology and obstetrics.
Capt. James D. Wilson, chief of x-ray service.
Capt. Eugene G. Wolff, anesthesia.
1st Lieut. Abraham I. Beacher, cardiology.
1st Lieut. Joseph A. Budetti, ear, nose and throat service.
1st Lieut. Laurence B. Felmus, gynecology and obstetrics.
1st Lieut. Victor J. Fimia, medical service.
1st Lieut. Robert W. Gans, psychiatry.
1st Lieut. Andrew E. Plahy, dental service.
1st Lieut. Anthony Reiger, physical therapy.

AVIATION MEDICAL EXAMINERS

A class of Aviation Medical Examiners graduated on April 22. The didactic portion of the course was conducted at the School of Aviation Medicine, Randolph Field, Texas, of which Brig. Gen. Eugen G. Reinartz, A. U. S., is commandant. The practical portion of the course was conducted at the three Army Air Forces classification centers. The list of graduates follows:

ALABAMA

James E. Kendrick Jr., Major, Greenville.
William C. Kennedy, Captain, Florence.

ARIZONA

Harold W. Kohl, Major, Tucson.
Arthur G. Nugent, 1st. Lieut., Douglas.

ARKANSAS

Joe W. King, 1st Lieut., Helena.
Garland D. Murphy Jr., 1st Lieut., El Dorado.

CALIFORNIA

Clifford A. Barber, 1st Lieut., Rosemead.
Joseph G. Campbell, Captain, Santa Barbara.
Nathan E. Carl, 1st Lieut., Los Angeles.
Salvador Castanares, Major, Los Angeles.
Walter H. Drane, Captain, Los Angeles.
John J. Duncan, 1st Lieut., Riverside.
Alfred S. Ehrlich, 1st Lieut., Beverly Hills.
Hyman Engelberg, 1st Lieut., Los Angeles.
Dewitt W. Englund, 1st Lieut., Orange.
Bernard B. Gadwood, 1st Lieut., Oakland.
Milton J. Groat, 1st Lieut., Montebello.
Wilbur B. Hurlbut, 1st Lieut., Santa Monica.
Kenneth B. Jenkins, 1st Lieut., Oakland (Piedmont).
Joseph E. Kaiser, 1st Lieut., Santa Monica.
Marshall Y. Kremers, 1st Lieut., Pasadena.
Robert Lewis, 1st Lieut., Berkeley.
Luther B. Lowe, 1st Lieut., Crows Landing.
Neil P. McCloy, 1st Lieut., Los Angeles.
John R. Munger, 1st Lieut., Los Angeles.
Maurice S. Priver, Captain, Los Angeles.
Layton S. Rogers, 1st Lieut., Whittier.
Warren N. Steele Jr., Captain, Modesto.
Avery E. Sturm, 1st Lieut., Yosemite National Park.
Joseph F. Walsh, 1st Lieut., Eureka.

COLORADO

David R. Akers, 1st Lieut., Erie.
Carl B. Ermshar, 1st Lieut., Boulder.
James G. Espey Jr., Captain, Trinidad.

CONNECTICUT

Edward A. Abbey, Major, New Haven.
Richard J. LaVigne, 1st Lieut., Hartford.
Ward J. McFarland, 1st Lieut., New Haven.

DISTRICT OF COLUMBIA

Jack Bollerud, Captain, Washington.
Joseph T. Jana Jr., Captain, Washington.
Frank S. Pellegrini, 1st Lieut., Washington.
G. Victor Simpson, Major, Washington.

FLORIDA

Richard H. Brooks, 1st Lieut., Miami.
William H. Weems, 1st Lieut., West Palm Beach.

GEORGIA

Ronald M. Burnside, 1st Lieut., Atlanta.
Edwin W. Turner, 1st. Lieut., Emory University.

IDAHO

Joseph E. Baldeck, Captain, Lewiston.
William R. Jacobs, 1st Lieut., Lewiston.
Reginald C. Randall, 1st Lieut., Kellogg.

ILLINOIS

Hanford L. Auten, 1st Lieut., Chicago.
Edward S. Baxter, 1st Lieut., Western Springs.
Isidore Brill, 1st Lieut., Champaign.
James H. Britton, 1st Lieut., Moline.
Herbert P. Dexheimer, 1st Lieut., O'Fallon.
Joseph J. Eckert, 1st Lieut., Chicago.
Gilbert J. Edwards, Captain, Pinckneyville.
Walter Gaines, 1st Lieut., Chicago.
Philip C. Hemming, 1st Lieut., Elgin.
David S. Koransky, Captain, Chicago.
Herman B. Lander, Captain, Chicago.
Otis H. Law, 1st Lieut., Pontiac.
Alfred N. Marshall, 1st Lieut., Chicago.
Clement J. Michet, Captain, Chicago.
John S. Moffatt, Major, Rantoul.
Joshua Oden Jr., 1st Lieut., Chicago.
William E. Rapp, 1st Lieut., Chicago.
Vernon C. Voltz, 1st Lieut., Rockford (Winnebago).
Frederick E. Walker, 1st Lieut., Chicago.

INDIANA

George E. Brown, 1st Lieut., Greenwood.
Vance J. Chattin, 1st Lieut., Washington.
Marion M. Crum, 1st Lieut., Angola.
John M. Engle, 1st Lieut., Portland.
Asa H. Fender, 1st Lieut., Worthington.
Mars B. Ferrell, 1st Lieut., Indianapolis.
Joseph W. Freeman, Captain, Syracuse.
James B. Johnson, 1st Lieut., Greencastle.
Leo Kammen, 1st Lieut., Indianapolis.
Samuel A. Manalan, 1st Lieut., Indianapolis.
Charles C. McVaugh, Captain, Pendelton.
Robert A. Nason, 1st Lieut., Garrett.
Charles B. Nash, Captain, Valparaiso.
Harold F. Schukneckt, Captain, Mishawaka.
Ben J. Siebenthal, Captain, Bloomington.
Lowell C. Smith, Captain, La Fayette (West La Fayette).
William R. Tipton, 1st Lieut., Greencastle.
Ward B. Warren, 1st Lieut., Indianapolis.
Gerald S. Young, 1st Lieut., Muncie.

IOWA

Emmett A. Doles, 1st Lieut., Clarion.
Draper L. Long, 1st Lieut., Mason City.
Seymour I. Shapiro, 1st Lieut., Iowa City.

KANSAS

Ernest A. Cerv, 1st Lieut., Wichita.
Fowler B. Poling, 1st Lieut., Halstead.
Lyle B. Putnam, 1st Lieut., Wichita.
Lee Emerson Rook, 1st Lieut., Kansas City.

KENTUCKY

Clair G. Prindle, 1st Lieut., Maysville.

LOUISIANA

David V. Brown, 1st Lieut., New Orleans.
Joseph B. Deisher Jr., 1st Lieut., New Orleans.
Lucas L. Di Giglia, 1st Lieut., Lake Charles.
Raymond E. Lovett, 1st Lieut., New Orleans.
James B. Montgomery, 1st Lieut., Lafayette.
Arthur J. Wallace Jr., 1st Lieut., New Orleans.
George H. Wright, 1st Lieut., Hodge (Jonesboro).

MAINE

Sprague Curtis, 1st Lieut., North Edgecomb.
William B. S. Thomas, Captain, Dover-Foxcroft.

MARYLAND

Albert J. Himelfarb, 1st Lieut., Baltimore.
Alfred H. Richwine, 1st Lieut., Chevy Chase.
Earl S. Scott, 1st Lieut., Baltimore.

MASSACHUSETTS

William D. Barone, 1st Lieut., Winchester.
Hugh J. Bonner, 1st Lieut., Boston.
George H. Boynton, 1st Lieut., Billerica.
William B. Garlick, 1st Lieut., Boston.
Oliver J. Harris, Captain, Boston.
Joseph R. Lourie, 1st Lieut., Worcester.
Arnold Porter, 1st Lieut., Boston.
Edmund J. Sullivan, 1st Lieut., Forest Hills.
George S. Woodfin, 1st Lieut., Boston.

MICHIGAN

Richard C. Armstrong, Captain, Ann Arbor.
Benjamin Barenholtz, 1st Lieut., Eloise.
Leslie Caplan, Captain, Detroit.
John P. Flanders, 1st Lieut., Monroe.
Thaddeus S. Huminski, 1st Lieut., Roseville.
Frederick E. Lapham, 1st Lieut., Detroit.
Victor E. Linden, 1st Lieut., Durand.
Leonard Price, 1st Lieut., Muskegon.
Rex E. Whitney, 1st Lieut., Detroit.
Edward J. Zabinski, 1st Lieut., Detroit.

MINNESOTA

David C. Dahlin Jr., 1st Lieut., St. Paul.
Richard A. Forney, 1st Lieut., Rochester.
Bernard Halper, 1st Lieut., St. Paul.
Robert D. Mooney, Captain, St. Paul.
Nicholas J. Musty, 1st Lieut., Minneapolis.
Frederick D. Roth, 1st Lieut., Lewiston.
Omer E. Snyker, Captain, Ely.
John D. Van Valkenburg, 1st Lieut., Floodwood.
William T. Walsh, 1st Lieut., Minneapolis.

MISSISSIPPI

Arthur A. Derrick Jr., 1st. Lieut., Jackson.

NEW HAMPSHIRE

John H. Kennard, Captain, Manchester.

MISSOURI

Umbert E. Anz, Captain, Kansas City.
Arthur R. Bortnick, 1st Lieut., St. Louis.
Samuel J. Davis, Captain, Kansas City.
Daniel W. Oungst, 1st Lieut., St. Joseph.
George G. Robinson, Captain, Humansville.
Harold E. Thornell, Major, St. Louis.

NEW JERSEY

Alan R. Bleich, 1st Lieut., Trenton.
William K. Booth, Captain, Boonton.
Louis K. Collins, 1st Lieut., Glassboro.
Ferdinand Fader, 1st Lieut., East Orange.
Aaron J. Kaycoff, Captain, Elizabeth.
Joseph M. Keating, 1st Lieut., Passaic.
Justin T. Leonard, 1st Lieut., Skillman.
Meyer E. Mackler, 1st Lieut., Paterson.
Samuel L. Pollock, 1st Lieut., Greystone Park.
Charles E. Rosen, 1st Lieut., Union City.
Bascom S. Waugh, 1st Lieut., Camden.

NEW YORK

David Altman, 1st Lieut., Massapequa.
Leo S. Bell, 1st Lieut., New York.
Charles J. Bivona, 1st Lieut., Newburg.
Aaron W. Bortin, Captain, Roslyn.
Paul Dooley, 1st Lieut., Buffalo.
Wilfred Dorfman, 1st Lieut., Brooklyn.
Seymour K. Fineberg, 1st Lieut., New York.
Lawrence H. Gahagan, Captain, New York.
Edward J. Gallagher, 1st Lieut., Scarsdale.
Herwald B. Geiger, Captain, New York (Jackson Heights).
Max P. Goodfried, 1st Lieut., New York.
Kenneth Gordon Jr., 1st Lieut., Rensselaer.
Sidney F. Grant, 1st Lieut., Brooklyn.
Walter A. Gunkler, 1st Lieut., Rochester.
Max J. Halperin, 1st Lieut., Flushing.
Harry H. Hershman, 1st Lieut., New York.
Robert W. Hunt, Major, New York.
Eldridge W. Johnson, 1st Lieut., Greene.
Harry E. Karounos, 1st. Lieut., New York (Brooklyn).
William J. Lazarus, 1st Lieut., Brooklyn.
Michael Lipari, Captain, Hicksville.
George J. Mastellone, 1st. Lieut., New York.

Robert L. McCollom, Major, New York.
Joseph J. McConnell, Captain, Elmira.
Raymond S. McKeeby, 1st Lieut., Binghamton.
Charles P. Melone, 1st Lieut., Bethpage.
Max B. Milberg, 1st Lieut., New York.
Saint R. Monachino, 1st Lieut., New York.
Harold F. Pierce, Major, New York.
George A. Reich, 1st Lieut., Schenectady.
Eric D. Savage, 1st Lieut., Valhalla.
John F. Schlechter, 1st Lieut., Brooklyn.
Solomon Sherry, Captain, New York.
Morris N. Silverberg, Major, Brooklyn.
Eldred J. Stevens, 1st Lieut., Hammondsport.
Henry H. Stroud, Captain, Brooklyn.
Louis A. Tripi, 1st Lieut., Buffalo.
Edward F. Walsh, 1st Lieut., Forest Hills.
Edwin F. Wilson, 1st Lieut., New York.
John H. Winkley, 1st Lieut., New York.
Anthony C. Yerkovich, 1st Lieut., Kingston.
Milton H. Yudell, 1st Lieut., New York.

NORTH CAROLINA

Bernhard H. Hartman, Captain, Asheville.
Ralph E. Lore, Captain, Lenoir.
Walter H. Simmons, 1st Lieut., Durham.

NORTH DAKOTA

Jesse W. Bowen, 1st Lieut., Dickinson.
Paul T. Cook, 1st Lieut., Valley City.
Oral H. Stone, 1st Lieut., Bottineau.

OHIO

William B. Ayres, 1st Lieut., Dayton.
George W. Beers, 1st Lieut., Canton.
Robert J. Deger, 1st Lieut., Dayton.
Eugene A. Ferreri, 1st Lieut., Cleveland (University Heights).
Marvin S. Freeman, 1st Lieut., Cleveland.
James A. Gavin, 1st Lieut., East Cleveland.
Ralph S. Grace, 1st Lieut., Hamilton.
Charles C. Henrie, 1st Lieut., Celina.
William J. Herman, Cleveland (Shaker Heights)
Luther W. High, 1st Lieut., Millersburg.
Saul W. Kessler, Captain, Cleveland.
Edgar A. Knowlton, 1st Lieut., Cleveland.
David R. Lewis, 1st Lieut., Grove City.
Bernard S. Malasky, 1st Lieut., Cleveland (Garfield Heights).
John H. Mowry, 1st Lieut., Conneaut.
Dan A. Nye, 1st Lieut., Columbus.
Frank J. O'Dea, 1st Lieut., Cleveland.
Harold G. Overley, 1st Lieut., Loveland.
Elias D. Peelle, 1st Lieut., Wilmington.
Alexander Pollack, Captain, Columbus.
Sanford Press, 1st Lieut., Steubenville.
Edward J. Purchla, 1st Lieut., Toledo.
Henry H. Roenigk, 1st Lieut., Cleveland (Lakewood).
Edward A. Sawan, Captain, Akron.
Joseph N. Schaeffer, 1st Lieut., Dayton.
George I. Scheetz, Captain, Rockford.
Edward E. Schumacher, 1st Lieut., Cleveland.
Richard H. Sloan, 1st Lieut., Marietta.
John W. Smith, 1st Lieut., Grand Rapids.
Homer D. Underwood, 1st Lieut., Van Wert.
Calvin F. Warner, 1st Lieut., Cincinnati.

OREGON

Stewart S. Merrill, 1st Lieut., Hermiston.

PENNSYLVANIA

Leon H. Collins Jr., Major, Philadelphia (Merion Station).
Robert F. Dickey, 1st Lieut., Northumberland.
Warren C. Dietrich Jr., 1st Lieut., Bethlehem.
Walter F. Edmundson, 1st Lieut., Pittsburgh.
Saul D. Eger, 1st Lieut., Pittsburgh.
Joseph H. Galia, 1st Lieut., Chester (Eddystone).
Thomas K. Hepler, 1st Lieut., Danville.
Paul F. Holl, 1st Lieut., Pittsburgh.
Paul C. Johnson, 1st Lieut., Montoursville.
Charles A. Lehman Jr., 1st Lieut., Williamsport.
Thomas J. Maye, 1st Lieut., Allentown.
Orden E. Miller, 1st Lieut., York.
James H. Parker Jr., 1st Lieut., Philadelphia.
Ralph I. Schwalm, Major, Valley View.
Raymond F. Smith, 1st Lieut., Pittsburgh.
Thomas Thomas, 1st Lieut., Oil City.
Harry B. Updegraff, 1st Lieut., Lemoyne.
Alfred W. Wagner, 1st Lieut., Philadelphia.
Arthur C. Webber, 1st Lieut., Coopersburg.
James E. Woodhouse, 1st Lieut., Bradford.

RHODE ISLAND

Emil J. Koenig Jr., 1st Lieut., Providence.

SOUTH CAROLINA

William C. Alston Jr., 1st Lieut., Greenwood.
Isadore I. Kolman, 1st Lieut., Ridgeland.
Jesse G. Seastrunk, 1st Lieut., Columbia.

TENNESSEE

William G. Kennon, 1st Lieut., Nashville.
Addison T. Tatum, 1st Lieut., Memphis.
Claud F. Yates, 1st Lieut., Memphis.

TEXAS

Mortimer H. Bannister, 1st Lieut., Pearsall.
Howard T. Barkley, Major, Houston.
Robert P. Collins, 1st Lieut., Wichita Falls.
Wilbur K. Green, 1st Lieut., Houston.
James A. Hallmark, 1st Lieut., Fort Worth.
Salmon R. Halpern, Captain, Dallas.
Kent N. Hunt, Captain, San Antonio.
Frank W. Kelley, 1st Lieut., Pampa.
Bruce A. Knickerbocker, Major, Dallas.
Sam A. Loeb, 1st Lieut., Sweetwater.
Donald H. McDonald, 1st Lieut., Abilene.
William D. Nicholson, Captain, Rosebud.
Jim S. Phillips, 1st Lieut., Rocksprings.
Joe L. Stevens, 1st Lieut., Fort Worth.
Harrison K. Wynne, 1st Lieut., Galveston.

VERMONT

Alberic H. Bellerose, 1st Lieut., Rutland.

VIRGINIA

George S. Ferrell, 1st Lieut., Lynchburg.
William P. Frazer, 1st Lieut., Hamilton.
John F. Gayle, 1st Lieut., Newport News.
Rowland H. Robertson Jr., 1st Lieut., Roanoke.
Robert R. Rudolph, Captain, Roanoke.

WASHINGTON

John J. Black, Captain, Ellensburg.
J. Harold Brown, 1st Lieut., Cle Elum.
Homer B. Frank, 1st Lieut., Fairfield.
John L. Hardy, 1st Lieut., Endicott.
Charles Van K. Hillman, 1st Lieut., Seattle.
Wendell C. Knudson, 1st Lieut., Seattle.
William E. McClain, 1st Lieut., Seattle.
Raphael C. McDonough, Captain, Spokane.
John O. Milligan, 1st Lieut., Seattle.
Edward L. Perry, 1st Lieut., Seattle.
Deane M. Pettibone, 1st Lieut., Renton.
Robert J. Tipler, 1st Lieut., North Bend.
Nathaniel D. Wilson, 1st Lieut., Tacoma.

WEST VIRGINIA

Carlisle B. Hughes Jr., Captain, Minden.
Joseph S. McDede Jr., 1st Lieut., Winona.

WISCONSIN

Gordon W. Brewer, Captain, Hartland.
Frank C. Goodwin, 1st Lieut., Wauwatosa.
Joseph F. Kelley, 1st Lieut., Janesville.
Henry M. Kleinhans, Captain, Wauwatosa.
Arthur A. Presti, 1st Lieut., Milwaukee.
Philip F. Voigt, 1st Lieut., Milwaukee.

CANADA

John L. Burns Jr., 1st Lieut., Toronto.

REPORTED MISSING

Lieut. Col. William A. Hutchinson, M. C., who was in command of a hospital in Eritrea in Africa, left there a few weeks ago by plane en route to a new assignment. The plane was last heard from fifty minutes out of Cairo, when a violent storm was encountered. Immediate search failed to reveal any trace of the craft. Lieutenant Colonel Hutchinson graduated from Tulane University of Louisiana School of Medicine in 1924.

The U. S. Army has also reported missing in action since February 17 Capt. Garrold H. Nungester of the medical department, who at that time was serving in a North African sector. Captain Nungester was a native of Decatur, Ala., and graduated from Tulane University of Louisiana School of Medicine in 1933.

The U. S. Navy has reported as missing in action Lieut. Felix B. Long Jr., a native of Starkville, Miss. Lieutenant Long graduated from Tulane University of Louisiana School of Medicine in 1940.

PRISONERS OF WAR HELD BY THE JAPANESE

The War Department has informed the parents of Capt. Joseph D. VandeVelde of the medical corps that he is a prisoner of war of the Japanese in the Philippine Islands. Captain VandeVelde practiced medicine in Cleveland in 1937 until he entered the army in May 1941. He left for the Philippines the following August.

The parents of Capt. Wilbert W. Buckhold of Cleveland have been notified that their son is a prisoner of the Japanese. Captain Buckhold became a reserve officer in August 1940 and was stationed at Fort Knox, Kentucky, till late in 1941, when he was transferred to the U. S. Army Sternberg General Hospital in Manila.

The War Department has informed the mother of Capt. Harold M. Immerman, U. S. Army Medical Department and formerly of Saginaw, Mich., that her son is a prisoner of the Japanese government in the Philippine Islands. Captain Immerman entered the army medical department in February 1941 and after training in Texas and Pennsylvania was sent to the Philippine Islands.

NAVY

NEW METHOD OF MAKING SEA WATER DRINKABLE

The Navy Department announced on June 8 that a simple method of making sea water safe to drink has been perfected at the Naval Medical Research Institute, Bethesda, Md. The method, which appears to be more practical than any other yet devised, except distillation, is intended primarily for use on rubber life rafts carried on air craft. The equipment consists of two chemical compounds and four plastic bags each having a capacity of slightly more than a quart. The survivor dissolves one of the chemical compounds in sea water contained in one of the bags, then pours the mixture into another bag that contains a filter sac. The product is emptied into the third bag and the first step is repeated except that the second chemical is used. After the chemical has acted, the water is filtered in the fourth bag. Two of the four steps are eliminated if only two of the bags are used. In this case one container serves for dispersion and filtration of each chemical compound. By the new method of desalination, a survivor who started out with ten of the chemical packets in the necessary bags would be assured of a twenty day supply of drinking water. If there were five persons in the life boat, the supply would be enough for four days.

The composition and design of the bags are the result of several months of experimentation at the Naval Medical Research Institute. The process of removing sodium salts from sea water was discovered by Lieut. (jg) Claire R. Spealman, hospital volunteer specialist, and further developed by Lieut. William V. Consolazio, hospital volunteer specialist, chief chemist of the Naval Medical Research Institute, and other members of the staff. Research was carried out under the direction of Capt. William L. Mann, M. C., medical officer in command of the Naval Medical Research Institute, and Dr. A. C. Ivy, scientific director of the institute, and the new method was announced by Rear Admiral Ross T. McIntire, Surgeon General of the Navy.

BRANCH STOREHOUSES FOR MEDICAL DEPARTMENT

In order to facilitate the issuance of supplies for the medical department, branch storehouses of the Brooklyn and San Francisco depots have been authorized. Storehouses under the control of the Brooklyn depot have been established at the U. S. Naval Hospital at Newport, R. I., the N. O. B. at Norfolk, Va., the U. S. Naval Hospital at Charleston, S. C., and the Naval Station, New Orleans. Those under the control of the San Francisco depot are located at Pier 41, Seattle, San Pedro, Calif., and San Diego, Calif. Medical storehouses established for overseas bases are intended to meet the needs of Naval forces operating in those areas, but large medical units and base hospitals, except when specifically authorized, should replenish their stores in the normal manner.

DENTAL REHABILITATION

Owing to the recent lowering of dental standards for enrollees, the Navy Department will undertake to rehabilitate, dentally, personnel requiring prosthetic dental replacements. At recruit training depots throughout the United States, laboratories will be established to carry out this extensive program. Many additional dental officers as well as enlisted personnel skilled in the field of prosthetic dentistry will be required. It is expected that additional building facilities will soon be erected to house these clinics and that present existing dental facilities at these centers will be expanded.

CONSULTANTS STUDY BATTLE CASUALTIES

Dr. Walter E. Dandy, professor of neurologic surgery at Johns Hopkins Hospital, Baltimore, and Dr. Meyer Wiener, professor of clinical ophthalmology at Washington University School of Medicine, St. Louis, both members of the Board of Honorary Consultants to the Surgeon General of the U. S. Navy, are on the West Coast observing battle casualties in the navy hospitals and appraising treatment methods. Dr. Dandy is accompanied by Capt. Winchell McK. Craig (MC), U.S.N.R., chief of the surgical service, Naval Hospital, Bethesda, Md.

SILVER STAR AWARDS

The Bureau of Medicine and Surgery announced on May 26 the Award of Silver Stars to Comdr. Emil J. Stelter and Lieut. Gerald H. McAteer, both of the Medical Corps of the Navy and former senior and junior medical officers respectively of the U. S. S. (aircraft carrier) *Hornet,* from which the Doolittle expedition bombed Tokyo and later was sunk in action in the Southwest Pacific area.

NEW NAVAL HOSPITAL

The Bureau of Medicine and Surgery of the U. S. Navy announced on June 7 that a new 400 bed naval hospital has been authorized to be established in Astoria, Ore.

MISCELLANEOUS

PHYSICIANS ON STRIKE IN THE NETHERLANDS

Reliable sources reported on April 28 that when a number of Dutch physicians were placed in "detention" for issuing certificates declaring patients physically unfit for guard duty ordered after sabotage had taken place, their colleagues went on strike. All doctors suspended office hours, accepted only urgent cases for treatment, referred accident cases to the municipal authorities, had their wives inform patients that interference on the part of the authorities prevented the doctors from rendering medical assistance, and asked physicians in neighboring towns not to take their places. The release of the arrested doctors followed quickly.

In another instance a doctor was imprisoned for refusing to violate the medical code by giving information about a patient to a layman. The other doctors in town immediately posted the following notice: "No consulting hours. A colleague has been imprisoned because he rightly refused to inform an unauthorized outsider about the illness of a patient. As long as this illegal detention lasts, other physicians cannot practice." The doctor was released within two days.

The physicians have warned the mayors that they held the authorities responsible for endangering public health, that they accepted the release of their colleagues as meaning that there would be no repetition of such arrests, and that if there were new arrests these would not have the slightest effect on their professional attitude. The doctors have also agreed not to fill out any forms, however innocent the source might appear, if these seemed likely to aid the authorities in collecting data about physicians.

The Stockholm *Svenska Dagbladet* reported that more than 4,000 physicians, or 97 per cent of the membership, stopped practicing rather than become members of the Dutch Nazi Physicians Chamber. When, however, dues for the organization were deducted from fees owed them by the health insurance funds, the physicians countered by refusing to perform any services for the funds. The German authorities answered by threatening to impose heavy fines on those failing to treat patients sent by the funds, but physicians removed their name plates and suspended all practice save for treatment of emergency cases. Eventually the authorities were compelled to allow the doctors to practice without membership in the Physicians Chamber.

In the March issue of a Netherlands underground paper, a physician described the attempts of German authorities to nazify the physicians:

"Soon after the occupation of the Netherlands German 'specialists' on organization of the medical profession were sent into the country to advise Dutch Nazis on use of existing medical societies as vehicles for infiltrating the profession with national socialist medical doctrines. The executive committee of the Netherlands Medical Society used every possible means to preserve the integrity of the organization, and when they realized that Nazi control could no longer be avoided, they resigned. Local branches of the society immediately declared their independence of the national organization, which consequently folded up. The Dutch Nazi Party then instituted a 'Physicians Chamber,' proclaiming every Dutch doctor automatically a member. The immediate reaction was that a number of prominent physicians contacted trusted colleagues throughout the country for the purpose of frustrating the Nazis' designs. Their first step was to send a letter to Reichs Commissioner Arthur Seyss-Inquart telling him that the medical profession would have no dealings with the Physicians Chamber or its works. The Germans proceeded with the organization of the chamber and declared every licensed practitioner a member. The chamber continues as more of an irritation than a functioning entity, as it is largely ignored by the physicians."

ESTABLISH NURSING SUPPLY AND DISTRIBUTION UNIT

A Nursing Supply and Distribution Unit has been established in the Placement Bureau of the War Manpower Commission, Chairman Paul V. McNutt announced on May 17. The new unit is designed to effect an equitable distribution of graduate nurses for military, governmental and essential civilian needs, somewhat as does the Procurement and Assignment Service for physicians, dentists, veterinarians and sanitary engineers. Establishment of the nursing unit under government auspices comes as a result of requests received from the nursing profession as represented by the National Nursing Council for War Service. The unit also has the approval of the Health and Medical Committee and the subcommittees on Nursing and Hospitals, Federal Security Agency. State and local Councils for War Service will be utilized for the operation of the unit. Quotas will be set up on national and state bases for the guidance of nurses in accepting service in military, governmental and essential civilian activities. Miss Katherine Tucker, director of the Department of Nursing Education, University of Pennsylvania, has been appointed chairman of an advisory committee to the Nursing Supply and Distribution Unit. Miss Alma C. Haupt, Washington, D. C., has been designated chief, and Miss Louise Baker, San Francisco, associate chief of the Nursing Supply and Distribution Unit.

PUBLIC HEALTH UNDER HITLER

According to *Novi List,* Sarajevo, Yugoslavia, of March 4 the Sarajevo municipality in conjunction with the German military authorities has issued the following health regulations: All travelers arriving at Sarajevo and sojourning there for more than twenty-four hours must be deloused and inoculated against typhus fever. Travelers arriving from Mostar will be deloused at the Alipasin refugee camp and may then continue to Sarajevo and beyond. Transit travelers from the directions of Brod and Visegrad southward beyond Bradina, and not sojourning at Sarajevo for over twenty-four hours, will receive a permit for the further journey from the German station officer at Sarajevo.

Reggeli Magyarorszag, Hungary, of March 6 states that anxiety has been caused in Hungary by the report of an unknown epidemic in Sweden of a disease which begins with a cold and sore throat and which is causing so many deaths that in certain districts (in Sweden) schools have been closed. It is also said that the symptoms resemble those of infantile paralysis. To reassure the public the reporter interviewed Prof. Dr. Josef Tomscik, who says that so far there have been no reports in Hungary of anything resembling the Swedish epidemic. It is possible that even the Swedish epidemic is one of ordinary influenza accompanied by certain complications. The professor added that the influenza research department of the National Public Health Institute is ready to deal with the epidemic should it occur.

According to *Dagens Nyheter,* France, of February 7 the Vichy correspondent reports, in an article on the decrease in the powers of resistance of the French population, that tuberculosis of the lungs has increased by 30 per cent. The main cause is naturally undernourishment. Growing children in particular are endangered. A large number of young people, instead of increasing in weight, have decreased by 3 to 4 Kg. The weight of infants at birth is mostly well under normal.

Simultaneously with undernourishment, moral dangers threaten the life of the French population. The breaking up of the family, the returning prisoners of war and the refugees who have not returned to their homes have contributed toward a certain demoralization. The Red Cross has set up orphanages in Lyons, Marseilles, Nice and Toulouse; 12,000 children are in homes, 30,000 in unoccupied France and 80,000 in occupied France. Child mortality in 1940 was 9.1 per cent. At the same time 25,000 stillborn children were announced, a large percentage of these cases being due to syphilis. Over 110,000 of the children born this year were registered as orphans without parents.

Paris-Soir of February 12 and 16 states that since the great food shortage, people are far more willing than ever before to undergo operations. This is noticeable in the hospital and also in private nursing homes. Today it is necessary to get one's name on a list a month or two before entering a hospital to reserve a place on the "table." An operation means fifteen to twenty days being waited on in comfortable surroundings. That is quite enough to induce people to part with some superfluous part of their anatomy which has been causing them discomfort for years. The actual operation is much more easily performed, as there are no thick layers of fat for the surgeon's knife to hew through. But there is a new difficulty: the accessories and instruments are beginning to run out. There are hardly any new towels and bandages, and there are few needles left for sewing the incision after the operation; they were made in Germany; those that are used in French hospitals today have been in use for three years and they are getting blunt. One surgeon stated that he had sewn up three or four thousand stomachs with one needle. As can well be imagined, nobody leaves lancets or clips inside the patients nowadays: they are far too precious to give to the patient to take away in his inside as a souvenir of his visit!

Besides diseases brought on because of food restrictions, skin disorders such as the itch are prevalent on account of the soap shortage. It happens all too often that sheets from hotel beds are merely swished through the water at the laundry, and the scabies "bugs" come back to the hotel again hungrier than ever after the bath they have had and that the hotel visitor does not get!

There are a distressing number of cases of consumption; and these are most frequent, not among children, but among adults between 50 and 60. They often have in their lungs lesions which are healed; the lack of milk, meat and fats has decalcified their scar tissue, and the bacilli have regained their virulence. They succumb to the disease after spreading the infection to those about them.

According to *Donauzeitung,* Greece, of February 11 vaccination against typhus has been made available to the inhabitants of Athens free of charge. The press made an appeal to the population, warmly recommending them in the interests of the community to avail themselves of the opportunity.

NPD, Germany, of March 31 reports the construction of a special apparatus by which it is possible to produce vitamin C from ordinary pine needles.

ORGANIZATION SECTION

PROCEEDINGS OF THE CHICAGO SESSION

MINUTES OF THE ANNUAL SESSION OF THE HOUSE OF DELEGATES OF THE AMERICAN MEDICAL ASSOCIATION, HELD IN CHICAGO, JUNE 7-9, 1943

HOUSE OF DELEGATES

First Meeting—Monday Morning, June 7

The House of Delegates convened in the Red Lacquer Room of the Palmer House and was called to order at 10 a. m. by the Speaker, Dr. H. H. Shoulders.

Preliminary Report of the Reference Committee on Credentials

A preliminary report of the Reference Committee on Credentials was submitted by the chairman, Dr. G. Henry Mundt, Illinois, who reported that about one hundred and forty-four delegates with proper credentials had registered.

Roll Call

A motion by Dr. Allen H. Bunce, Georgia duly seconded, to dispense with the formal roll call and accept the registration of the delegates was carried.

Dr. Olin West, Secretary, announced that it would shortly be necessary to have a ballot, and the Speaker requested the Secretary to proceed with the roll call, after which the Secretary called the roll and announced that a quorum was present.

Distinguished Service Award

Dr. Roger I. Lee, Chairman of the Board of Trustees, presented a report of the Board, as follows:

The Committee on Distinguished Service Awards of the American Medical Association submitted five names to the Board of Trustees.

In accordance with chapter VI, section 5, of the By-Laws, the Board has selected by ballot the following names for presentation to the House of Delegates in alphabetical order, and presents a brief statement concerning each of them:

Dr. A. J. Carlson is a professor of physiology who for years has been an Associate Fellow of the American Medical Association. Dr. Carlson is widely known as a great teacher and the contributor of fundamental research in many aspects of medicine.

Dr. Elliott P. Joslin is known throughout the world for his contributions to our knowledge of diabetes and for his educational contributions in this field for both the medical profession and the public. He has participated in graduate education and is the author of several books of distinction.

Dr. Torald Sollmann is professor of pharmacology and has served as dean of the medical school of Western Reserve University at Cleveland. Dr. Sollmann has been a member of the Council on Pharmacy and Chemistry since it was first organized and has for many years been chairman of that body.

On request of the Speaker, Dr. G. Henry Mundt, Chairman, stated that the Reference Committee on Credentials had registered 161 Delegates.

The Speaker appointed as tellers Drs. George A. Woodhouse, Ohio; Thomas F. Thornton, Iowa; Walter A. Howard, Oklahoma; J. H. Irwin, Montana, and James Q. Graves, Louisiana.

The tellers spread the ballot, and the Secretary announced that one hundred and forty-seven votes had been cast, of which Dr. Carlson received thirty-seven, Dr. Joslin ninety-one and Dr. Sollmann nineteen.

The Speaker declared Dr. Elliott P. Joslin, who had received a majority of the votes cast, to be elected by the House of Delegates to receive the Distinguished Service Award of the American Medical Association, and directed the Secretary to inform Dr. Joslin of this action.

Adoption of Minutes of Atlantic City Session

Dr. E. G. Wood, Tennessee, moved that the House dispense with the reading of the minutes. The Secretary called attention to the fact that Dr. Arthur J. Bedell, Section on Ophthalmology, had notified him that the name of Dr. Bedell should not have been attached to the report of the Reference Committee on Sections and Section Work but that the name does so appear.

On motion of Dr. Arthur T. McCormack, Kentucky, seconded by Dr. H. B. Everett, Tennessee, and carried, the minutes were corrected to omit the name of Dr. Bedell as a signer of the report of that committee.

Dr. Arthur J. Bedell, Section on Ophthalmology, moved that the proceedings of the Atlantic City Session of the House of Delegates as printed and distributed be adopted as amended. The motion was seconded by Dr. William R. Brooksher, Arkansas, and carried.

Address of the Speaker, Dr. H. H. Shoulders

The Vice Speaker, Dr. R. W. Fouts, Omaha, presided while the Speaker, Dr. H. H. Shoulders, read his address, which was referred to the Reference Committee on Reports of Officers:

Mr. Speaker, Members of the House of Delegates and Guests:

I wish, first, to express to the members of the House my gratitude for the honor and privilege of addressing you again as your presiding officer and for your generous attitude toward my shortcomings.

I have been led to believe that many, if not a majority, of the delegates wish to complete the work of this session at the earliest possible moment in order that all may return to urgent duties at home. There is no doubt that urgent duties exist for every doctor at home and it is in sympathy with such a wish that my address will be brief.

Notwithstanding all the circumstances of this session, it is the regular annual session of the House. Business which is eligible for consideration by the House at any regular session is eligible, of course, for consideration at this session.

It seems appropriate, at this time, to call to your attention a provision in chapter IV, section 4, of the By-Laws. It reads as follows:

> SEC. 4. TIME OF ELECTION.—The election of officers shall be the order of business of the House of Delegates immediately following the final supplementary reports of the Board of Trustees and Committees on the afternoon of the fourth day of the annual session of the House of Delegates (Thursday); provided, however, that the House of Delegates may change the time of election by action taken at least one day in advance of that to which the election is to be changed, and provided further that the motion to change the time of election shall be supported by two thirds of the delegates registered.

In this connection I would like to suggest to you the thought that no duty can be more urgent at this time than the duty of conducting the business of this session with all the deliberation necessary to enable the House to arrive at sound conclusions and take the appropriate actions. The present, it seems to me, is no time for hasty or ill considered actions.

There is one duty of the Speaker which I perform each year with a sense of dissatisfaction and regret. It is the duty of appointing reference committees. The By-Laws limit the number of reference committees to ten and the number of delegates on each reference committee to five except when the

House takes action to create additional committees. It is apparent, of course, that only fifty of the hundred and seventy-three members of the House can be appointed to a reference committee. My sense of dissatisfaction grows out of the conviction that the interest of each and every member would be stimulated by opportunity for service on a reference committee. My sense of regret grows out of the fact that I dislike so much to leave any member off of a reference committee.

It is a fact generally recognized that the reference committees perform a most vital function. Their work is arduous and difficult and too often made more difficult by the fact that delegates not serving on a committee attend the sessions of the Scientific Assembly instead of the hearings of one or more reference committees. This very attractive distraction is not present here this year, so I would like to suggest that all delegates who are free to do so attend as many reference committee hearings as possible. Such collaboration should make it possible for reference committees to make reports to the House so complete that little discussion from the floor will be required to establish a thorough understanding of the question and thus enable the House to act promptly.

The House is honored rather frequently by the presence of Fellows of the Association who are not eligible to the floor of the House. It should be understood by them that they are eligible to attend reference committee hearings and be heard if they wish to speak on a question under consideration by the committee.

The minutes of the House show that reference has often been made to the heavy responsibilities which rest on you as the delegated representatives of the entire profession of medicine in this nation. It seems to me that members of the House are fully conscious of their responsibilities. At the same time it is my impression that the importance of your duties and their relationship to the whole of medicine are not always fully appreciated by your constituents. I therefore would like to address myself to this question for a moment. Your functions, it seems to me, are those of a medical statesman. I use the word "statesman" in this connection as embracing all the attributes which distinguish a statesman from a politician, such qualities, for example, as broad knowledge, wisdom, vision, courage and loyalty to high principles. The politician, in the commonly accepted meaning of the term, possesses and exercises skill in the conduct of manipulations to accomplish his purposes without too much regard for their ultimate effects. American medicine has been blessed through the years by the benefits of a high order of medical statesmanship. It was medical statesmanship which wrote and adopted the Constitution and By-Laws of this organization which gave it a body. Wise statesmanship wrote and adopted the principles of ethics of our profession which gave it a soul. Medical statesmanship is responsible for all the actions taken to promote progress in medical education, public health, medical research and the adoption of higher requirements to practice, all of which add up to better medical care for the people. It was medical statesmanship which took all the actions necessary to make the services of the medical profession so available and so effective in the present war effort.

The ultimate effects of all these actions are being reflected in delightful news from every battle front to the effect that our soldiers, sailors and marines are getting the best medical care ever received by the soldiers of any nation at any time.

The quality of medical statesmanship which has been applied to medical problems in the past is entitled to a full measure of credit for the tremendous usefulness of medicine in our present day civilization whether in peace or in war.

As I visualize the future, many new problems will arise to challenge the statesmanship of medicine. In my opinion it occupies a place of importance second to none other in medicine today. The whole future of our profession will be determined not by research, however important its contributions may be, but by the character of the medical statesmanship which is brought to bear on these new problems as they arise. In conclusion, may I say to you that I know of no more trustworthy assurance as to the continued usefulness of medicine as a science and an art and its continued attractiveness to men of noble intentions in the future, than the record of this House of Delegates in the important field of medical statesmanship.

In Memoriam

In accordance with the established custom of the House of Delegates of taking official notice of the death of Fellows who have served the Association in official capacities, either as members of the House or as Officers of the Association, the Speaker called the roll of those who had passed away since the House met in June of 1942, as follows:

(The dates following the names indicate years of service in the House or as officers of the Association.)

Willaim P. Adamson, Florida, 1929.
John B. Alcorn, Ohio, 1938; 1938, Special Session; 1940-1942.
John F. Barnhill, Indianapolis, Section on Laryngology, Otology and Rhinology, 1905; 1920.
Sherman G. Bonney, Denver, Section on Hygiene and Sanitary Science, 1902.
D. Chester Brown, Connecticut, 1907-1914; 1916-1918. Member, Board of Trustees, 1918-1934.
William L. Brown, Texas, 1911.
Howard P. Collings, Arkansas, 1905.
Guy L. Connor, Michigan, 1917-1918; 1920.
John F. D. Cook, South Dakota, 1920; 1930; 1932.
Frank W. Cregor, Indiana, 1925-1926; Section on Dermatology and Syphilology, 1929-1934. Member, Judicial Council, 1923-1933.
George W. Crile, Cleveland. Third Vice President, 1907.
J. Rilus Eastman, Indiana, 1912-1915; 1917; 1919-1922; 1924.
Howard C. Frontz, Pennsylvania, 1930-1939.
David S. Funk, Pennsylvania, 1910.
L. N. Grosvenor, South Dakota, 1931.
Winfield Scott Hall, Chicago. Section on Pathology and Physiology, 1907.
William M. Harsha, Illinois, 1905.
Arthur D. Hirschfelder, Minneapolis. Section on Pharmacology and Therapeutics, 1919
Edward Jackson, Colorado, 1909-1912. First Vice President, 1904.
Robert W. Knox, Texas, 1904-1905; 1908; 1927-1928.
Wilmer Krusen, Pennsylvania, 1917-1919; 1921.
Grant C. Madill, New York, 1912-1913; 1922-1935; 1937; 1938 Special Session; 1939-1940.
Ben R. McClellan, Ohio, 1911; 1913-1914; 1916-1917; 1919-1923; 1925-1941.
Charles F. McComb, Minnesota, 1909-1911.
Clifton M. Miller, Virginia, 1912.
John H. Peck, Iowa, 1921.
Reuben Peterson, Michigan, 1907; Section on Obstetrics, Gynecology and Abdominal Surgery, 1919.
Herbert A. Potts, Chicago. Section on Stomatology, 1924.
John A. Robison, Illinois, 1912.
Andrew C. Smith, Oregon, 1902; 1909. Second Vice President, 1906.
Alfred B. Spalding, California, 1917; 1919. Section on Obstetrics, Gynecology and Abdominal Surgery, 1923.
Smith A. Spilman, Iowa, 1926.
Walter R. Steiner, Connecticut, 1919-1925; 1927; 1929-1933; 1936-1940.
Thomas Pinckney Waring, Georgia, 1906.
Hubert Work, Colorado, 1906-1907; 1909-1913. Member, Judicial Council, 1911-1916; Speaker, House of Delegates, 1916-1920. President-Elect, 1920-1921; President, 1921-1922.

On motion, duly seconded and carried, the delegates arose and stood in silent tribute to the memory of the deceased delegates and officers.

Reference Committees

The Speaker, before announcing the personnel of the Reference Committees, asked and received permission, on motion of Dr. Arthur T. McCormack, Kentucky, seconded by Dr. Walter E. Vest, West Virginia, and carried, to name two additional reference committees, namely the Reference Committee on Executive Session and the Reference Committee on War Participation. The personnel of the Reference Committees as appointed by the Speaker is as follows:

SECTIONS AND SECTION WORK

Francis F. Borzell, Chairman, Pennsylvania
L. G. Christian, Michigan
Olin H. Weaver, Georgia
Benjamin F. Cook, Vermont
Arthur J. Bedell, Section on Ophthalmology

RULES AND ORDER OF BUSINESS

Raymond L. Zech, Chairman, Washington
E. N. Roberts, Idaho
George P. Johnston, Wyoming
Edward N. Ewer, California
A. A. Walker, Alabama

MEDICAL EDUCATION

Wilburt C. Davison, Chairman, North Carolina
Walter G. Phippen, Massachusetts
Robert E. Schlueter, Missouri
Charles H. Phifer, Illinois
Leon J. Menville, Louisiana

LEGISLATION AND PUBLIC RELATIONS

Thomas A. McGoldrick, Chairman, New York
Edwin S. Hamilton, Illinois
Lloyd Noland, Alabama
Parke G. Smith, Ohio
William R. Molony Sr., California

HYGIENE AND PUBLIC HEALTH

Warren F. Draper, Chairman, U. S. Public Health Service
Holman Taylor, Texas
Don F. Cameron, Indiana
Ransom D. Bernard, Iowa
Walter W. King, Colorado

AMENDMENTS TO CONSTITUTION AND BY-LAWS

Walter E. Vest, Chairman, West Virginia
E. G. Wood, Tennessee
L. A. Buie, Section on Gastro-Enterology and Proctology
Karl S. J. Hohlen, Nebraska
William Weston, Section on Pediatrics

REPORTS OF OFFICERS

Deering G. Smith, Chairman, New Hampshire
Floyd S. Winslow, New York
Joseph H. Cannon, South Carolina
William R. Brooksher, Arkansas
Edward Jelks, Florida

REPORTS OF BOARD OF TRUSTEES AND SECRETARY

Louis H. Bauer, Chairman, New York
Robert A. Peers, California
Andrew F. McBride, New Jersey
W. A. Coventry, Minnesota
James R. McVay, Missouri

CREDENTIALS

G. Henry Mundt, Chairman, Illinois
J. Newton Hunsberger, Pennsylvania
Alonzo A. Ross, Texas
A. P. Nachtwey, North Dakota
Thomas M. Brennan, New York

MISCELLANEOUS BUSINESS

Charles G. Strickland, Chairman, Pennsylvania
Albert A. Gartner, New York
H. A. Luce, Michigan
James M. Hayes, Minnesota
Stephen E. Gavin, Wisconsin

REAPPORTIONMENT

Arthur T. McCormack, Chairman, Kentucky
L. W. Larson, Section on Pathology and Physiology
Alfred T. Gundry, Maryland
William T. Rainey, North Carolina
David D. Scannell, Massachusetts

EXECUTIVE SESSION

John H. Fitzgibbon, Chairman, Oregon
Thomas P. Murdock, Connecticut
Lucius F. Donohoe, New Jersey
Barney J. Hein, Ohio
James P. Wall, Mississippi
James C. Sargent, Wisconsin
J. F. Hassig, Kansas

WAR PARTICIPATION COMMITTEE

Stanley H. Osborn, Chairman, Section on Preventive and Industrial Medicine and Public Health
Charles H. Henninger, Pennsylvania
Sam E. Thompson, Texas
Forrest J. Pinkerton, Hawaii
Walter B. Martin, Virginia
L. B. McAfee, U. S. Army
Harold W. Smith, U. S. Navy

SERGEANTS AT ARMS

John Z. Brown, Utah
Thomas A. Foster (assistant), Maine
Frank E. Reeder (assistant), Michigan

TELLERS

George A. Woodhouse, Ohio
Thomas F. Thornton, Iowa
Walter A. Howard, Oklahoma
J. H. Irwin, Montana
James Q. Graves, Louisiana

Address of President Fred W. Rankin

The Speaker resumed the chair and presented the President, Brig. Gen. Fred W. Rankin, Lexington, Ky., who delivered the following address, which was referred to the Reference Committee on Reports of Officers:

Mr. Speaker and Members of the House of Delegates:

The realization that I am about to relinquish the office of President of this Association prompts me to pass in review our record, crammed with exciting events, and to scan the horizon anxiously for gathering storms which may imperil our course and test further our courage and endurance. That we have kept a steady course set toward the maintenance of the health of the nation and its armed forces during these turbulent times of worldwide hostilities, despite hurried preparation, bespeaks our Association's self-sacrificing devotion to duty and emphasizes its indomitable spirit and resolute determination—characteristics distinctly American. Never during its history or, for that matter, during the history of our country, has there been the urgent demand which current exigencies have imposed on our special talents and skills. The rapid, thorough and efficient manner in which these demands were met has been due in great measure to the astute foresight of our leaders, who, long before that fateful day when our enemies treacherously launched us into this holocaust, began careful preparations for the inevitable requirements which develop, as a consequence of the military, industrial and continuing civilian needs for adequate medical care. That these plans were well contrived and intelligently executed is forcefully demonstrated by the continued improvement in the health of our nation and our armed forces despite the fact that about 40 per cent of the usable medical personnel of the country has entered the services, and the added burden of a parallel gigantic industrial expansion that has been placed on the thinned ranks of the remaining civilian physicians. My deep gratification in reporting this thrilling and inspiring performance is heightened only by my humble respect and intense appreciation for the high honor you so generously bestowed on me as your President in this trying period, and for the distinct privilege of participating in these activities and in associating with the scrupulously sincere, assiduously attentive and particularly competent members of the Board of Trustees and the executive staff of this Association.

During the past year our country has been feverishly engaged in mobilizing and preparing its industries and manpower for war on a scale unprecedented in its history. All efforts have been directed toward a single fundamental purpose—the creation and preparation, as rapidly as possible, of a formidable military machine with irresistible striking power. This has required a national metamorphosis in which the medical profession has participated eagerly and wholeheartedly. Indeed, no other group has shouldered its responsibilities in this emergency with greater self abnegation, more cheerful enthusiasm and more efficient adaptability. On us devolved the obligation of establishing a bulwark against epidemic disease and military casualties, both on the home front and on the farflung battlefields of this globe-encompassing war. Essentially our function is concerned with the conservation and maintenance of health. That we have performed this function successfully is demonstrated by the fact that we have given our civilian workers production superiority in the rapidly expanding war-geared industries, and our armed forces combatant superiority in the jungles of Guadalcanal, on the gale swept North Atlantic and on the blistering deserts of North Africa.

The most difficult and exigent phase of the war, i. e. rapid mobilization, has been expeditiously concluded. Now our paramount problems are concerned with logistics; production has been achieved. Consideration is already being given to postwar planning even though it may seem little warranted at this time. It should be realized, however, that only by such long range charting can the confusion and disorder which characterize immediate postwar reconstruction periods be averted. The manifold problems arising from these future developments will deeply concern and intimately affect us all. A rational solution of these problems depends on their thorough comprehension; but first they must be sighted as distantly and as clearly as possible. Accordingly we set a watchful gaze on the horizon.

It must now be apparent, even to those who have been most purblindly recalcitrant, that mighty influences are at work to effect epochal changes in the complexion of medical practice. While it would appear that these influences have suddenly loomed on the medical scene, it should be realized that they have long been forming and that the present military conflict has merely hurried their development and magnified their significance. That they can no longer be ignored seems difficult to controvert. We must face realistically these tremendously forceful socioeconomic trends which are intimately involved and deeply concerned with the nation's medical problems. The directional sign posts of postwar planning may now be clearly read by proposals already made for broadening the social security program and extending the nation's economic resources to assure "adequate medical and health care for all, regardless of place of residence or income status." The complex connotations and inevitable implications of these plans and proposals make it quite apparent that the old system of medical practice will be considerably modified. If the limitless and baneful potentialities that can be projected into the science and art of the future of medicine are to be averted, it becomes imperative in this transition period that the wise and tempered counsel of the medical profession exert its proper influence. That our medical descendants should look back and point a culpable finger to our page of history which would read that our actions were "too little and too late" is a plaguing thought. Our responsibility in approaching and participating in these evolutionary processes is greater than many of us have been willing to admit; indeed, it is intimately involved with the medical security of our country as well as of our profession. Have we so long basked in the luxuriating rays of medicine as the apotheosis of professions that we have become languid and inelastic in our

attitude and hesitant and fearful in our response to existing socioeconomic developments? I sincerely hope not.

Our motives are inherently sincere. They are based on desiderata to which we have held tenaciously and which we must guard assiduously lest future progress toward higher standards in medicine and professional tenets be jeopardized. Our ultimate objectives consist essentially in the provision of the best possible preventive measures against disease, the institution of the best possible forms of therapy and the ceaseless pursuit of advances and improvements in technical procedures and other prophylactic and therapeutic measures for clinical application. It requires no percipient degree of rationalization to realize that the complete fulfilment of these objectives for the entire nation would necessitate the development of a comprehensive medical service.

It is becoming increasingly apparent that the trends now gathering momentum are directed toward some form of national health service as an integral function of the state. Proposals of this nature by governmental postwar planning agencies, both here and abroad, have been the subject of deep consideration, wide editorial comment and cogent discussion. This mood has been further reflected in recent comments by various medical and nonmedical writers who have penetrated with incisive clarity to the very heart of this controversial subject. It has been stated by some that the financing of this type of medical service is a socioeconomic consideration and not a medical problem. While it may be argued that financial provision for the institution of such a service is a function of the commonwealth, I am impelled to emphasize the fact that the structural character of the organization of any such type of health service is tremendously important to doctors and is vitally concerned with the execution of their professional function. This entire subject must be brought into sharp focus by the light of trenchant and dispassionate thought in order to observe both the desirable as well as the possible apprehensive aspects of the contemplated proposals.

In the national fulfilment of our altruistic objectives it must be recognized that two essential provisions are required, namely professional and financial facilities. It must also be recognized that the successful attainment of these objectives cannot be accomplished if in the implementation of any plan or proposal the professional facilities are subjugated to the authoritative management, traditionally dictated by political whimsy, of some legislative council controlling the financial provisions. These two provisions are interdependent and cannot be distinctly separated in approaching our objectives. The successful application of the former requires certain facilities supplied by the latter, which in turn can be guided intelligently only by professional knowledge. These vastly significant facts must be sincerely appreciated by all parties, both medical and nonmedical, concerned with this problem in their approach to its solution.

It is necessary to realize that the establishment of one of these contemplated medical services does not sound the death knell of private practice of medicine. These two forms of medical service are not incompatible, and their consideration must not be regarded in the light of apostasy but rather in the light of realism. They become incompatible only if in attempting their admixture certain undesirable ingredients are added. The problem is too difficult, the time is too short and the stakes are too high for all concerned to allow these factors to influence our actions. All efforts must be harmoniously combined and closely coordinated toward the elaboration of an intelligent program which will permit a democratic as well as a comprehensive medical service with equally high professional and ethical standards.

It should be clearly understood that this embraces the concept of existing freedom of thought and action in the exercise of our profession and our scientific pursuits. No one is more keenly aware, no one more fully cognizant than I, of the resultant stultification of the science and art of medicine which would be occasioned by any loss or curtailment of this freedom. Here is a principle which is more than a heritage: indeed, it forms the supporting foundation of the art of medicine and the guiding light of the science of medicine. It was freedom to think and freedom to express thought in speech and in writing unhampered by the fearful consequences of traditional or legislative authority that permitted medicine to progress to its present exalted position in the field of science, and it is absolutely essential in its continued advancement. It is a principle, therefore, which we can never relinquish.

Since the challenges now confronting medicine will undoubtedly be multiplied as we approach the termination of this conflict and the commencement of the difficult reconstruction period, it becomes our responsibility and duty, with ever mounting importance and increasing urgency, to prepare to meet them now. In addition to the problems concerned with medical practice, we must be ready to meet the related problems of postwar rehabilitation of physicians—physicians whose entry into service involved personal sacrifices and the revamping of plans and ambitions, and whose return to civilian pursuits will necessitate numerous and variable readjustments and even resumption of specialized training.

These are prodigious tasks with manifold ramifications and far reaching significance, but tasks which we must face with unflinching resolve. Their achievement will demand not only sincerity of interest, integration of effort and clarity of thought but also active and close collaboration with appropriate governmental agencies. We cannot disregard the growing interest of the public, the government and various lay groups in the administration of medical care; nor can we afford to engage in a struggle for domination. The solution to these problems and the attainment of our objectives do not lie in that direction. They can be approached more expeditiously by a willingness to share their responsibilities and a readiness to cooperate in their consideration. The importance and urgency of these various problems commend the immediate establishment by this Association of suitable agencies for their investigation. In the institution of these agencies the purpose and vast significance of their function, the sharp delineation of their problems and the need for their collaboration with others should be emphasized. They must also be impressed with the importance of these studies and their resultant proposals on which so much depends. Indeed, the plan of action which we institute, the attitude which we manifest and the intelligence, zeal and judgment which we employ now in our efforts to solve these problems will greatly influence and actually determine the future standards of the medical service of our country and the cultural standards of our profession.

Address of President-Elect James E. Paullin

The Speaker presented the President-Elect, Dr. James E. Paullin, Atlanta, Ga., who delivered the following address, which was referred to the Reference Committee on Reports of Officers:

Mr. Speaker and Members of the House of Delegates:

For the past ten years it has been my privilege to be associated with the official family of the American Medical Association as a member of the Council on Scientific Assembly, as a delegate, as a member of the Medical Preparedness Committee and now as your President-Elect. For the confidence bestowed in me by this body I am deeply grateful. As a member of the Committee on Medicine of the National Research Council and as a member of the Directing Board of the Procurement and Assignment Service for Physicians, Dentists and Veterinarians I have had added opportunity to come in contact with the officers, and with practically all councils, bureaus and boards of this association. I seriously doubt if the members of the House of Delegates or of the American Medical Association realize the vast amount of work accomplished each year by the official bodies of this organization. Particularly have I been impressed with the amount of time and the earnest consideration devoted to the business of the Association by the Board of Trustees. Each member takes his work most seriously; I feel that the Association is under many obligations for the thoroughness with which they transact its business. I have noted with a great deal of satisfaction the contribution which representatives of the American Medical Association have made in a consultative capacity with numerous agencies of the federal government and with pleasure the tendency for all organizations interested in medical care at least to become trustful of one another and to be more willing to combine their efforts for the furtherance of medical care.

We are most fortunate in having the untiring and unselfish service of two valuable officials, who at all times and on all

occasions zealously guard the interests of this organization and constantly strive to increase its usefulness to the profession and to the public. I refer to Dr. Olin West, the Secretary and General Manager, and to Dr. Morris Fishbein, the Editor of THE JOURNAL. The war has placed on them extraordinary burdens which they have borne successfully, although not without hazard to their own health.

The creation of the Procurement and Assignment Service as a federal agency has been a great help in solving some of the problems arising as a result of the war and the withdrawal of physicians from civil practice. More frequent conferences between this agency and the War Participation Committee of the American Medical Association will be of benefit in helping to solve some of the problems created by the present emergency. The influence of such cooperation is evident in the effort being made by the Procurement and Assignment Service, together with the War Participation Committee and the United State Public Health Service, to relocate physicians in areas of acute need for medical service in numerous areas of the United States. The suggestions adopted by this conference of investigating all reported areas of distress by state committees representing the medical profession, the Procurement and Assignment Service, the Public Health Service, the Office of Civilian Defense, industry and labor have been most effective in establishing essential requirements and in suggesting appropriate methods for the relief of these situations. Continuation of such a cordial relationship will become of increasing importance with the further withdrawal of physicians from civilian practice. It is suggested that the House of Delegates encourage the War Participation Committee to consult with other organizations that may be interested in the development of a program for the emergency care of civilian communities deprived of an adequate number of physicians.

Experience gained in 1936, when a survey of rural health conditions in Georgia was made by the United States Public Health Service in cooperation with the state medical association, has convinced me that many problems of medical care for rural communities can be satisfactorily solved by the establishment of health centers placed at strategic areas in communities in great need of this type of service. The establishment of such centers will make hospital and nursing care available to a community and will supply for physicians the necessary facilities for the diagnosis and treatment of disease. This type of service is available now for communities in great distress if applied for through the United States Public Health Service or other federal agencies.

The Council on Medical Education and Hospitals of the American Medical Association is much interested in the plans of the federal government to establish special training courses for the enlisted personnel belonging to either the Army or the Navy. It has been necessary for the council to change certain recommendations, without lowering the standards, to make possible the accelerated medical training program. The lowering of the draft age to 18 years will bring other changes in the method of selection of premedical students and the distribution of students who may enter medical colleges. No provision has been made for the education of doctors to replace the casualties occurring in civilian practice. An agreement has been reached with the Surgeon Generals of the Army and Navy to allow approximately 1,200 students, comprising women and those men physically disqualified for military duty, to continue at their own expense the study of medicine. The 4,500 other graduates will be used for replacement in the military services.

An increasing responsibility is felt for the continuation of medical education and postgraduate training to be made available to the men in the military service and to civilian physicians. This responsibility is accentuated because for the duration there will be no annual meetings of large national societies which furnished facilities for this type of instruction. To overcome this the Board of Trustees has appointed a Committee on Wartime Graduate Medical Training, which is sponsored by the American Medical Association, the American College of Surgeons and the American College of Physicians. Already this committee has secured a large group of nationally known consultants in various fields of medical activity and has established, in twenty-four zones of the United States, committees which will receive requests for, and sponsor, programs to be submitted at various service hospitals for men on military duty in those particular areas. Such courses will be open to civilian physicians. Some thirty or more subjects have been listed from which each commanding officer of a given unit may choose those which he desires presented. Such a program has the approval of the Surgeon Generals of the Army and of the Navy and is offered to the Army through the surgeon of each service command and to the Navy through the commandant of each naval district. The response to such an undertaking has been most enthusiastic and remarkable. Programs are already being prepared for various installations and it is believed that by July 1 they will be in effect.

The officers and trustees of the American Medical Association have earnestly devoted themselves in recent years to advancement of the policies established by the House of Delegates in the field of social security. The diligence with which they have pursued this task has permitted the people of our country, under the leadership of the medical profession, to undertake the gradual development of modifications in medical practice leading toward the eventual establishment of plans distinctly our own. We face the postwar period without the restrictions of a state system of medicine, a federal or state system of compulsory sickness insurance or any of the other limitations on medical practice developed by governments abroad as a part of state control in medical care. By the exercise of American initiative we find between twelve and fifteen million Americans now insured voluntarily against the costs of hospitalization and many state and county medical societies, industrial organizations and private insurance companies engaged in extending protection against catastrophic illness. The initiative still rests with the people and with the medical profession in determining the kind of medical care that is to be provided in the future and in assuring the widest possible distribution of medical services to all the people. The importance of sound planning at this time for future developments cannot be overemphasized. Under the leadership of American medicine, all the agencies concerned should cooperate in formulating programs for redistribution of physicians in the postwar period, for the provision of hospitals and medical centers and for the establishment of methods for making available preventive, diagnostic and curative methods as they are developed. In such planning we should consider the obligation that we owe to ourselves and to the peoples of the countries now dominated by the Axis for the supply of needed medical personnel necessary for the rehabilitation of the sick and injured.

The American College of Physicians and the American College of Surgeons have appointed committees on the planning of postwar medical services. The Board of Trustees of the American Medical Association, recognizing the importance of this work, established a temporary committee to confer with these committees. A meeting recently held explored some of the problems relative to postwar medicine. It is anticipated that at least half of the members of the American Medical Association will be in the government services before the war ends. Many of these members will have been away from their practices for a period of years. The return of these physicians will present many difficult problems relating to those who have never engaged in the practice of medicine; some will desire new locations; others may desire refresher courses or postgraduate instruction; all will find a different world from the one they left.

It is recommended that the House of Delegates approve the action of the Board of Trustees in making plans to meet these problems and authorize the development of a permanent Committee on Planning of Postwar Medical Services to cooperate and collaborate with other agencies concerned with these problems.

There are other problems which will naturally arise during the consideration of many of these activities. It is my sincere belief that this body of physicians, entrusted with the protection of the health and welfare of the citizens of our country, will be able through its committees, councils, bureaus and boards to offer suggestions and to formulate procedures which will be of the greatest aid in helping to solve many of the problems that face us now and that will arise in the future. For these we must be prepared. American medicine today faces the greatest

opportunity ever offered our organization to make a lasting contribution to the betterment of the health of mankind and the establishment of an enduring peace.

PRESENTATION AND ADDRESSES OF DISTINGUISHED GUESTS

Surg. Gen. Norman T. Kirk, United States Army

Brig. Gen. Fred W. Rankin, President, introduced the new Surgeon General of the United States Army, Dr. Norman T. Kirk, as follows:

Mr. Speaker and Members of the House: On Tuesday, June 1, a new Surgeon General of the United States Army was installed. In selecting a man to fill this tremendously important post in these parlous times, the Secretary of War and the Chief of Staff presented to the Commander in Chief of the Army the name of a surgeon whose prominent professional repute and extensive administrative experience in the Army, both in peacetime and in war, particularly qualified him for the responsibilities of this office.

Since the Medical Corps is charged with the duty of preserving the health and maintaining the fighting strength of the Army at a peak level required to assure combat superiority, it is particularly fitting that one with unique professional talent should be chosen.

The new Surgeon General is an eminently qualified surgeon, as is attested by his membership in the élite surgical societies of this country as well as the exclusive international surgical societies. His peculiar aptitude for surgery of the extremities and for thoracic surgery and his numerous innovations and contributions to the surgical literature in these fields are well known to all of you.

I have particular pleasure as a former schoolmate of the Surgeon General to be permitted to present him and to testify not only to his extraordinary professional skill but also to his sturdy, aggressive spirit, his assiduous industry and his innate integrity.

Gentlemen of the House, I give you the Surgeon General of the Army, Major General Norman T. Kirk.

Major General Norman T. Kirk addressed the House as follows: *Mr. Chairman, General Rankin, Ladies and Gentlemen:* I feel it is probably a surprise for you to see me in this high office of Surgeon General. It was to me. I was called to Washington and told that I was nominated for this high office, which I knew brought much honor with it and hard work. I am not used to the former but I am to the latter. I was also told I was going to North Africa immediately. I wasn't given a chance to say no to either. I couldn't have said no to the first because I wanted so much to go to Africa. So I thought it might be of interest to you to have a little story of what has been going on over there.

As you know, the Tunisian campaign has come to a successful conclusion. I happened to be about 5 miles out of Tunisia the morning the Germans unconditionally surrendered. The roads were so full of German prisoners in German trucks driven by German drivers and officers in officers' cars going to the rear that one could hardly proceed up those roads by motor. It was a wonderful sight to see.

I talked after this to General Eisenhower, the commanding general of the forces there, and to General Clark, the commanding general of the Fifth Army, and they both assured me that the outstanding thing that happened in that campaign was the services rendered by the Medical Department. This was done under trying conditions. In North Africa the distances are great. It isn't desert; where that fight went on mainly was north of the Atlas Mountains, with great hills and valleys, certain parts of which remind one of California as one drives through it.

You wouldn't believe it in Africa, but anti-freeze had to be put in the trucks to keep them from freezing last winter when this fight was going on. Our sick and our nurses and our personnel were living in tents under those conditions, and it was cold. In June I slept in a tent under five blankets with all my clothes on but my shoes and was cold then, so it was colder than that in May.

The distances were great there. It is 1,200 miles from the front to our Atlantic base to which our battle casualties had to be evacuated to be carried home by transport. Much of this would have been impossible had it not been for Air Corps evacuation. Airplanes that were used as freighters to a given area 150 miles behind the line, back to the first base, carried some 13,000 battle casualties. These planes came up as freighters and then were fixed to carry 16 litter patients back to the first base sector.

The units forward did excellent work—the evacuation hospitals that were set up, and the clearing stations—and the death rate was unbelievably low. The death rate in these units, the evacuation hospitals, ran from 2.5 to 3.5 per cent. In the last war it ran around 15 per cent, if my memory is correct. Patients were transported back in excellent condition. Only 1 case of death occurred from gas gangrene. There were only 12 cases of gas gangrene, due to primary suturing and tight packing of wounds. Why this low mortality and this excellence of care of battle casualties? First, plasma, which had been made available to us through the Red Cross from volunteers at bleeding stations, the Army processing it and shipping it over there. Second, excellent technical care, proper surgery, supplemented by sulfonamide drugs. I am sure these are the things that helped to give us in this campaign the very low death rate.

In a check of infection before leaving there, there were recorded only 77 cases of osteomyelitis in the two base sectors for this campaign, which has extended since last November. I think you will agree that that is remarkable.

The general health of the command over there has been as good as at home, or better. The sick rate has been less than at home. The venereal rate has been high, particularly in Negro troops. It is getting under control. The malaria season is about to begin. The rains have just finished; they finished in May, a month late. It is always unusual weather anywhere one goes; it was unusual there. When the rains were active, the mud was ankle deep. Our nurses over there are working in coveralls and in the mud wearing general issue shoes that the men wear and wearing soldiers' heavy underclothes to keep warm in the winter months, and they are doing a wonderful job and delighted with it. The only nurses that were in trouble were those that were waiting to get on the job, and likewise the doctors. Unfortunately doctors—all of us—are used to doing something always, and this business of war irks them, their training at home, sitting around waiting to go, or after they are over if they are not actually engaged. In those evacuations they were working twenty hours a day. They refused the auxiliary groups set up, they didn't want them around, they didn't belong to them; they could do their own job. That was their attitude. So it has been a wonderful thing that the Medical Department has done in North Africa.

You would be surprised at the grain crops. Looking at this country as a country, the grain crops are everywhere. The red poppy is everywhere through the fields; it is beautiful. Mountain roads overlook beautiful valleys, but over those mountain roads ambulance drivers drove ambulances to get to evacuation hospitals, maybe 20, 30 miles, so tired they staggered as if drunk, filled up with coffee, and back on the ambulance to the front to get another load. Litter bearers in evacuation hospitals with blisters on their hands from carrying litters were still working.

One man came out to see me from the operating room who had served with me at Walter Reed. The surgeon apologized for his looks. He said "That man hasn't been to bed for two nights." That is the spirit of the men who are over there doing the job.

That is only a beginning of what needs to be done in further campaigns to come. We have scattered throughout the earth, in every country in the earth, Medical Department installations and personnel, except that part of the earth which belongs to the Axis. We are planning now for installations to go in there to take care of the civilian group after we take over. So eventually these Medical Department installations and personnel will be scattered through every country throughout the earth as soon as we take it over piece by piece from the Axis.

I want to thank this organization as a group and as individuals for the wonderful help and support they have given the Surgeon General and the Medical Department. Without it the job would have been impossible. I hope that I may have the same support. There will be times when things look as if they aren't going right, when too many doctors are sitting around doing nothing, and too many nurses, too many empty beds in hospitals, and this and that and the other thing, but it's going to be that way, it can't be any other. The doctor is like a fireman. The firemen sit around playing cards most of the time until they have to get busy. That is the doctor in war. We can't keep them all employed all the time. If there was a

way to give them a barbiturate and keep them quiet until we had to use them it would be fine.

I thank you for being able to appear before you this morning, and ask for your support and help and constructive criticism.

George M. Morris, President of the American Bar Association

Dr. West presented Mr. George M. Morris, President of the American Bar Association, who spoke as follows:

Mr. Chairman and Ladies and Gentlemen: I happen to be a member of the committee which reorganized the American Bar Association in 1936. At that time the American Bar Association instituted a House of Delegates, almost a direct adoption of the House of Delegates which has been so successfully conducted by the American Medical Association. I made a study not only of the constitutional background of this organization, but of its statutory and its regulatory background, and here I am today, a good deal like a boy who has read about a famous man, never thinking he would meet him, and suddenly stepping around the corner, meets the famous man whom he knows all about.

In connection with the formulation of our procedure and fundamental concepts in the American Bar Association, the experience of the American Medical Association was an invaluable aid. It always seemed an anachronism to me, but nevertheless it was true that here were the lawyers who would be expected to be the pioneers in a legislative group like this taking their lessons from their brother professionals the medics on how to do the job that the lawyers themselves ought to know how to do. It is a great compliment to the men who have had the management of the American Medical Association under hand for so many years that that particular thing should have taken place, and we, therefore, I say on behalf of the American Bar Association, are greatly indebted to you for this example in helping us institute an agency which has meant more to the American Bar Association's successful functioning in its community effort than any single agency that has been brought into that Association in the twenty-one years I have known it.

I also may say that I think the bar is greatly indebted to the medical profession because of the contribution that organized medicine as distinguished from the individual physician and surgeon has made to the growing social consciousness of the organized bar. Organized medicine has blazed the way in this country for voluntary social contributions by organized groups. We are very happy in the American Bar Association to take advantage of the blazes that you have made along the trail.

I am very happy, Dr. West, to have had this opportunity of this introduction by you, sir.

Mr. Speaker, I served as the first chairman for the House of Delegates for the American Bar Association for a term of two years; I know what it is to meet a speaker's schedule. I hope you will forgive me for interrupting yours. Thank you, gentlemen.

Dr. T. C. Routley, Secretary, Canadian Medical Association

The Secretary introduced Dr. T. C. Routley, Secretary of the Canadian Medical Association, who spoke as follows:

Mr. Speaker and my American Friends: Once again it is my proud privilege and pleasure to bring you greetings from the medical profession of Canada. For twenty years this has been my joy and I can't tell you how stimulating, how vitalizing, how helpful you in your turn have been to us, and I particularly want to pay tribute, as I have on other occasions, to that grand man of yours, Olin West. When I realized that you were having but a business meeting, and we on our side of the line are having the same, I couldn't resist the temptation to come over here even for a day.

As I listened to that stimulating address of Major General Kirk, which I am sure must have pleased you all, I thought of the challenge which constantly stands before the medical profession.

You may have observed in one of our medical journals a recent statement, a composite bit of thinking, I understand, on the part of the psychiatrists and psychologists, that man seeks three things: security, happiness and freedom from pain. Today we find a world gripped in the greatest war of all times, a war for what? For security, happiness and freedom from pain. I wouldn't think, Mr. Speaker, it would require very much imagination for any man of average intelligence to recognize that the victors who are going to secure security, happiness and freedom from pain must be the United Nations, because we find on the other side those who if they won would plunge the world into a sadistic state the like of which mankind has never heard of. So the challenge to the medical profession surely, Mr. Speaker, a challenge which has always existed, is being exemplified by your people in Africa today, because your people were there. We have it on the authority of the Surgeon General that the troops were able to do a better job, and I venture to say they were happier and certainly because of you they must have had much freedom from pain.

When I think of the great American Medical Association and what you represent, 150,000 to 175,000 doctors, and when I think of the possibilities that lie before you throughout the world and throughout the ages, I am not envious, Mr. Chairman, but I only hope that we in our small way in Canada, only 12,000 strong, may go along with you and that together we may emerge on that white horizon in the not too distant future where security and happiness and freedom from pain will be the lot of all men of good will.

I want to thank you most sincerely for receiving me here today.

REPORTS OF OFFICERS

Report of the Secretary

Dr. Olin West, Secretary, presented his report as printed in the Handbook, which was referred to the Reference Committee on Reports of Board of Trustees and Secretary, except the proposed amendment to the Constitution, which was referred to the Reference Committee on Amendments to the Constitution and By-Laws.

Report of Board of Trustees

Dr. Roger I. Lee, Chairman, presented the report of the Board of Trustees as printed in the Handbook and the following supplementary reports of the Board of Trustees, all of which was referred to the Reference Committee on Reports of Board of Trustees and Secretary, with the exception of the reports of the Council on Industrial Health and the Bureau of Health Education, which were referred to the Reference Committee on Hygiene and Public Health; the report of the Bureau of Legal Medicine and Legislation, which was referred to the Reference Committee on Legislation and Public Relations, and the statement dealing with Participation in the War Effort, which was referred to the Reference Committee on War Participation:

SUPPLEMENTARY REPORT OF BOARD OF TRUSTEES

DECISION OF THE SUPREME COURT OF THE UNITED STATES

The decision of the Supreme Court of the United States in regard to the case involving the Medical Society of the District of Columbia and the American Medical Association was announced on Jan. 18, 1943 and was published in THE JOURNAL on January 23. On the advice of counsel a check for $2,500 has been sent to pay the fine assessed by the District Court against the American Medical Association. Following further advice of counsel, analysis or interpretation of this decision has not been made.

The policies of the American Medical Association in the standardization of medical education, hospitals or other aspects of medical care are established by the House of Delegates. In the conduct of its defense in this case, the Board of Trustees acted on the authority of the House of Delegates, in each instance given unanimously.

RESIGNATION OF TREASURER HERMAN L. KRETSCHMER

It is with a great deal of regret that, as Chairman of the Board of Trustees, I have to announce the resignation of Dr. Herman L. Kretschmer as Treasurer of the organization. Dr. Kretschmer tendered his resignation in a communication dated April 15. This communication came before the Board of Trustees at its meeting on Sunday, June 6, 1943, and was accepted with very deep regret. Dr. Kretschmer has served for ten years as the Treasurer of this Association. In addition to his services as Treasurer he has by his constant presence at all the meetings of the Board of Trustees given that Board the benefit of his wise and able counsel.

The Board of Trustees at its meeting on June 6, 1943 charged the Secretary and General Manager, Dr. Olin West, to carry on the duties of the Treasurer until the election of a new Treasurer by the House of Delegates.

COMMITTEE ON INTER-AMERICAN RELATIONS

The Association was highly honored at its annual session held in Atlantic City last year by the presence of a number of distinguished physicians from countries of South America and Central America and from Mexico, Cuba and Canada. The value of the scientific program presented at the Atlantic City session was greatly enhanced by the contributions made by several of these distinguished guests, and many new friendships were established. For the sake of the cause of scientific medicine in each of the countries of North and South America and in the interest of the promotion of friendly relations with the medical profession in all of them, the Board of Trustees recommends that a Committee on Inter-American Relations be created.

SAFEGUARDING THE HEALTH OF WOMEN IN INDUSTRY

At the 1942 annual session a resolution was adopted by the House of Delegates in which the Council on Industrial Health was requested to give consideration to preparation of a statement pertaining to the health of girls and women engaged particularly in war industries. In accordance with the provisions of this resolution and with further recommendations by the Board of Trustees, the Council on Industrial Health requested the Committee on the Health of Women in Industry of the Section on Obstetrics and Gynecology for suggestions concerning this problem. The committee prepared a report which was presented at the fifth Annual Congress on Industrial Health on Jan. 12, 1943 and was subsequently published in THE JOURNAL. Copies of this report have been widely distributed.

COMMITTEE TO STUDY AIR CONDITIONING

The Committee to Study Air Conditioning has submitted a report to the Board of Trustees concerning progress in the particular field with which the committee is concerned but has suggested that, because of the nature of existing conditions, the report be withheld from publication at this time.

COMMITTEE ON AMERICAN HEALTH RESORTS

Conditions created by the war have interfered materially with the work of the Committee on American Health Resorts, and it is probable that duties imposed on members of the committee, both military and civilian in nature, will impede progress until after the war has ended. Dr. W. Paul Holbrook, one of the original members of the committee, resigned because of his active military service. Dr. Euclid M. Smith is also engaged in military service but is continuing to serve as a member of the committee.

During the last year the rules of the committee have been thoroughly revised. Provision has been made for modification of existing rules when necessary so that health resorts included in the official lists of the committee may have reasonable opportunity to comply with modified rulings or voluntarily to withdraw from the listing. One rule provides that the advertising of health resorts shall not exploit the fact that the resort is listed by the Committee on American Health Resorts and that the fact of such listing shall not constitute the principal feature of publicity of any health resort. The revised rules now provide that listing of an institution on its first application shall be limited to a period of one year, that subsequent to that time listing shall be for three years, and that all listings shall be subject to prior review in event of violation of the committee's rules.

Work on the preparation of scientific papers on health resort therapy is being continued, although progress toward the completion of manuscripts is slow because many of those concerned as authors are on active duty with the military forces or have had to assume greatly increased responsibilities of other nature.

Nineteen health resorts have requested application forms, and the superintendent of Hot Springs National Park has asked for twenty forms for the institutions located in that area. Seven applications for the consideration of the committee have actually been filed. One institution which has applied for consideration has been taken over by the federal government, and one has been closed for the duration of the war, while five applications are now under consideration by the committee. All of the five institutions concerned have been visited by inspectors of the Council on Medical Education and Hospitals. No acceptances for inclusion in the official list of the committee have yet been made.

At the last meeting of the Committee on American Health Resorts Dr. W. S. McClellan, who previously had served as acting chairman, was elected chairman of the committee.

SUPPLEMENTARY REPORT OF THE BOARD OF TRUSTEES DEALING WITH HOSPITAL CORPORATIONS ENGAGING IN THE PRACTICE OF MEDICINE

The subject matter covered in this report is contained in three resolutions submitted to the House of Delegates as follows:

1. The resolutions introduced at the Atlantic City session in 1942 by Dr. E. H. Skinner, Section on Radiology.

2. The resolutions introduced by Dr. Harry H. Wilson, California, at the Cleveland session in 1941.

3. The resolutions introduced by Dr. Lyell C. Kinney, California, at the Atlantic City session in 1942.

The Skinner resolutions assert that group hospitalization plans continue to include certain medical services contrary to the expressed policies of the House of Delegates, that such practice puts corporations into the practice of medicine, that they inject a third party into the personal relationship between the physician and the patient, and that hospitals should not be permitted to practice medicine through the medium of employed physicians or enter into a contract to furnish such services. To correct this situation the resolutions ask that, when professional services are rendered under such conditions, the physician's fee be collected by or on the account of the physician, that the physician's bill be sent directly to the patient served and that hospital services be defined so as to limit them to bed, board, operating room services, medicine, surgical dressings and general nursing care.

The reference committee to which these resolutions were referred recommended the adoption of the resolutions but stated that it saw no new principles not already accepted by the House. It concurred in the necessity for clarification of the existing relations between physicians and hospitals.

The Wilson resolutions, stated briefly, asserted that it was of primary importance that prepayment and other nonprofit organizations make clear the differentiation between medical and hospital services so that the physician-patient relationship of the pathologist, the radiologist and the anesthetist may be preserved. It is recognized in the resolutions that difficulties exist because of the apparent necessity of setting up plans to cover low income groups and it is asked that the House of Delegates instruct the Board of Trustees to appoint a committee to confer with committees of the national hospital associations for the purpose of working out and submitting reports to their respective organizations designed to clarify the situation, that the Board of Trustees proceed as expeditiously as possible and that any agreements arrived at be submitted to the next session of the House of Delegates and in the interval the respective agencies involved be advised of the tentative agreements.

The reference committee reporting on these resolutions approved the first portion asking for the appointment of a committee to confer with the national hospital associations in an effort to set up platforms or principles that would clarify the relations between the groups involved and stated with regard to the second portion of the resolutions, which was emphatically approved, that it found that much investigation would be necessary which might overtax the administrative personnel of the Association because of the medical preparedness program in connection with the war effort. With regard to the third part of the resolutions, the reference committee advised that pathologists, roentgenologists and anesthetists be requested to refrain from entering into contractual relations with hospitals until the matters under consideration could be clarified.

The Kinney resolutions assert that a dangerous situation exists, to wit, that certain insurance companies covering hospital and health insurance schemes pay for medical services billed under the misnomer of hospital services. It is feared, continues the resolutions, that this abuse will lead to further inclusion of the physician's services in hospital bills, and requests

that the House of Delegates ask the insurance companies to cooperate with the medical profession, to pay for medical services only on the receipt of bills for such by physicians rendering the service, and asks that physicians in turn cooperate by seeing to it that professional charges and hospital charges are clearly separated.

The reference committee reporting on these resolutions said that it did not recommend passage of the resolutions in their present form, since it felt that there were difficulties involved which would require much investigation to get the facts and that delicate negotiations would be required, and referred the matter to the Board of Trustees for study, for the weighing of the feasibility and scope of procedure and for ways and means of accomplishing the desired result.

COMMENT

In reviewing these resolutions, it becomes apparent that all the questions involved in the same or similar form have previously been considered and acted on by the House of Delegates. By way of example, the reference committee, handling a resolution on the administration of anesthetics introduced in the 1937 session, said in substance "Your reference committee believes that in principle the administration of anesthetics, the interpretation of roentgenograms, the interpretation of laboratory findings and the application of physical therapy measures constitute the practice of medicine and should be confined to those who are licensed practitioners of medicine. However, your reference committee believes also that in practice it is at present inexpedient to urge the enforcement of the provisions of this resolution."

Again at the 1937 session, reporting on resolutions involving group hospitalization, the reference committee stated "Your reference committee would refer to the report of the Board of Trustees, page 22, principle 4, which was adopted by this House of Delegates. In that paragraph the limitations of hospital service are well defined. Your reference committee reaffirms this definition of hospital care and recommends its application to contracts for group hospitalization. In regard to certain benefits offered by many hospital insurance plans, combining professional and technical services, your reference committee is in complete sympathy with those who would make every possible provision to prevent inclusion of any and all types of service involving medical care."

Reporting at the 1936 session on resolutions concerning the practice of medicine by hospitals through the agency of employed physicians, the reference committee stated "the principle enunciated by the House of Delegates at Cleveland in 1934, 'that the practice of radiology, whether for diagnostic or therapeutic purposes, constitutes in fact the practice of medicine'" and recommended that "all services connected with the practice of radiology be under the direct control and supervision of the medical profession, and this same principle pertains to other technical and professional services."

Concerning the ethical consideration involved in these resolutions, the Judicial Council of the Association has made certain pertinent observations. For instance, in the Council's report in 1929 it stated "The American Medical Association cannot control legislation or the administration of law. . . . The remedy must be sought at the hands of legislatures in the several states, and it would seem to be the responsibility of the constituent state association to instigate measures seeking relief if the initiative to that end is not taken by the law makers and the administrative officers of the state."

Reporting at the 1930 session, the Council stated "The development of industrial medicine, the activities of corporations in medical fields, the expansion of public health programs, especially those of unofficial agencies, the organization of so-called 'hospital associations' and 'cooperative diagnostic laboratories', the creation of funds and foundations concerned in some manner with medical practice or public health, the workings of compensation laws and many other factors have given rise to many new questions and have produced many perplexing problems of which final solution is not easily possible. To all of these coming to its attention the Council is giving earnest consideration and is attempting to be helpful in devising plans of action that will safeguard the integrity of the medical profession and contribute to the public welfare."

At the 1941 session under the heading of "Principles, Not Laws," the Council states "Furthermore, the membership of the Council, even though spread over the United States from New York to Washington and from Ohio to Texas, cannot be familiar with local laws, customs and needs, all of which must be taken into consideration in an interpretation of the Principles as applied to a specific situation. The Principles of Medical Ethics of the American Medical Association in all its statements is based on and covered by the first section; namely, 'A profession has for its prime object the service it can render to humanity; reward or financial gain should be a subordinate consideration.' . . . The principle is the same in all sections of the country, but what may be ethical in one place may be unethical in another as the result of different laws, different customs, different needs of the people. The Judicial Council cannot have knowledge of all these. Each constituent state medical association should have the knowledge in its own state which the Judicial Council lacks, and many of the inquiries coming to the Council should have been addressed to the state associations, the officers of which, because of proximity, are better qualified to advise." In the same report this Council continues "it cannot be said too often that these principles are not laws to govern but are principles to guide to correct conduct."

It would thus appear that such questions as the patient-physician relationship, the corporate practice of medicine, the separation of medical from hospital services in group hospitalization contracts, have been, as illustrated, repeatedly considered and acted on by the House of Delegates. These actions stand now, as before, as expressions of principle. But, since local conditions with regard to accepted local practices, economic conditions, availability of qualified specialists in certain fields and public and professional attitudes vary widely, the difficulty arises in the practical application of the principles involved to the problems to be solved. The truth is that our code of ethics and our laws as approved by the House of Delegates governing our relationship to the public and to one another are, as the Judicial Council has stated, more in the nature of principles than ironclad blueprints. A moment's reflection will suggest the wisdom of such standards. Conditions and circumstances surrounding a given question vary widely in different jurisdictions. Circumstances may lead to the adoption of a course of action as just in one section, whereas the absence of such conditions would veto a similar course in another. When it is borne in mind that it is to public interest that medicine everywhere is primarily intended to serve, it becomes apparent that no rules of conduct or standards of procedure that are in conflict with such primary intent could with consistency be maintained. It is because medicine accepts this arrangement and urges its faithful application that our governing bodies, state and national, have always refrained from inflexible enunciations. Reduced to its essence, medical organizations in this country are in spirit and in fact decentralized with the responsibility placed where it belongs—on the state and county medical society level. Only general principles are enunciated by the national body, and these, as just stated, are subject to modification when in the judgment of a constituent society local conditions require it. The crux of the question can be stated in another way, namely that the supreme aim of medicine and all its pronouncements, ethics and guiding principles is to furnish a high quality of medical service to all the people regardless of economic status.

On the other hand, in our effort to avoid the exploitation of either the public or the profession we must ever be watchful lest the privilege of definitive action accorded state and county societies be not used as license for the popularization of abuses. Where such already exists, local societies should act. They have the implements for such action, and no new pronouncements are necessary. It is true that we have learned in these troublesome times that the destroyers of the nation's institutions work silently by methods now popularly known as infiltration tactics. The guardians of the people's liberties and their institutions, such as free medical practice, must have their initiative whetted and their sense of observation sharpened by constant awareness. The presentation in the House of Delegates of such resolutions as are now under consideration are timely and commendable. They reemphasize the necessity for eternal vigilance.

CONCLUSIONS

1. In the solution of a given abuse, whether concerned with exploitation of the physician or with exploitation of the patient, actual facts must be established and local conditions must be understood before the adjudicating body can act. Constituent associations and component societies are in a better position than are the national bodies to obtain and to act on these cardinal necessities.

2. Conditions vary widely in the respective jurisdictions requiring the weighing of circumstances before the letter of the principle or the approved action of the House of Delegates can be equitably applied.

3. The local society is better able than is the national body to do justice to a situation that is colored by so many factors.

4. No new principles are involved in the resolutions under consideration, and no new pronouncements would appear to be necessary.

5. The responsibility for the correction of abuses rests primarily on component county medical societies and constituent state or territorial medical associations empowered to govern themselves in local matters, while they may reasonably be expected to abide by the authority of the House of Delegates in matters of general policy.

6. The obligation to prevent the exploitation of the patient while protecting the prerogatives of the physician bears with equal responsibility on our profession.

7. Special societies are in position to help in the equitable solution of these urgent problems by securing the understanding and cooperation of their members. Attempts to devise remedial measures at the national level would appear to be unwise.

SUPPLEMENTARY REPORT OF BOARD OF TRUSTEES DEALING WITH PROGRESS REPORT OF THE COMMITTEE TO STUDY THE RELATIONSHIP OF MEDICINE AND LAW

In accordance with the provisions of the resolution submitted to the House of Delegates at the Cleveland session in 1941 by Dr. Walter G. Phippen, delegate from Massachusetts, a Committee to Study the Relationship of Medicine and Law was appointed in January 1942 by the Board of Trustees. The committee consisted of Dr. Edward R. Cunniffe, Mr. J. W. Holloway Jr., Dr. Harrison S. Martland and Dr. Alan R. Moritz, Chairman.

The first meeting of the committee was held on Jan. 24, 1942 and was attended by Prof. Rollin M. Perkins and Mr. Louis S. Cohane representing the committee of the American Bar Association designated to collaborate with the committee of the American Medical Association.

As a result of an exhaustive discussion of the scope of the assignment, it was decided that of the various relations that exist between medicine and law no activities are more important than those closely integrated medical and legal activities that have as their common purpose the investigation of deaths in the interests of justice and public safety. It was decided to divide the problem into three major components, each of which was assigned to a subcommittee for study and investigation pending the next meeting of the committee. One of these was to define the medical desiderata of such a public service. Another was to define the legal desiderata. The third was to survey the various types of coroner and medical examiner systems now operating in the United States in order to determine in what respects they conform to or fall short of the optimal scientific and legal objectives.

The second meeting of the committee was held on Aug. 15, 1942, at which time the various subcommittee reports were presented and discussed. At the request of the committee, Dr. Timothy Leary and Dr. Thomas A. Gonzales attended the meeting and participated in the discussion. The Chairman was instructed to prepare from the findings of the subcommittees a provisional report for submission to the committee of the American Bar Association for criticism. Such a provisional report was prepared and sent to the various committeemen as well as to the members of the corresponding committee of the American Bar Association.

Since August 1942 various criticisms and suggestions have been made for improving the preliminary report. One was that a survey should be made of the relative costs of operating coroner and medical examiner offices in urban and rural districts. Another was that the committee should draw up various types of model legislation for the improvement of coroners' or medical examiners' offices. At the present time both of these latter projects are being undertaken. Letters of inquiry and questionnaires have been sent to a large number of county treasurers, coroners and medical examiners and to various federal, state and college bureaus concerned with studying the costs of county government. Several months will probably be required for the acquisition of sufficiently complete information to permit the completion of a final report.

During the past year legislation designed to replace the office of county coroner with that of medical examiner has been introduced in three states. In two of these, members of this committee have been actively concerned in an advisory capacity.

It is the intent of the committee to submit a final report of its activities to the Board of Trustees at some time during 1943.

Respectfully submitted,

ALAN R. MORITZ, Chairman.

SUPPLEMENTARY REPORT OF BOARD OF TRUSTEES DEALING WITH REPORT OF PROCEEDINGS OF THE JOINT COMMITTEE MEETING OF NATIONAL HOSPITAL ASSOCIATIONS AND REPRESENTATIVES OF THE BOARD OF TRUSTEES OF THE AMERICAN MEDICAL ASSOCIATION

FACTUAL DATA FROM CONFERENCES

In compliance with the resolution of the House of Delegates which directed the Trustees to "explore" and "clarify" the relationship of medical service in hospitals, the following report is submitted:

In the past three years the Board of Trustees of the American Medical Association has had repeated conferences with the hospital associations and with representatives of groups representing special activities in medicine including pathologists and radiologists. On Dec. 19, 1941 representatives of the laboratory groups of chemistry and of pathology met with the Executive Committee of the Board of Trustees. On Nov. 19, 1942 representatives of the three hospital associations met with the Board. Present at this conference were Edgar Blake Jr., Rev. Joseph A. George and Mr. Albert G. Hahn, American Protestant Hospital Association; Rt. Rev. Mons. Maurice F. Griffin, Dr. James A. Hamilton, Dr. Robin C. Buerki, Mr. Frank J. Walter and Dr. Bert W. Caldwell, American Hospital Association, and Rev. Alphonse M. Schwitalla, Rev. John W. Barrett and Mr. M. R. Kneifl, Catholic Hospital Association. Dr. Herman G. Weiskotten represented the Council on Medical Education and Hospitals. Lieut. Col. Harold C. Lueth, the liaison officer of the Surgeon General's Office, also was present. The national hospital conferees represented the joint committee of the three hospital associations. At this meeting problems of technicians in the several activities of the hospitals and the fundamental principles of medical practice, as well as the inclusion of medical services in hospital contracts, were discussed. The discussions as to hospitals and medical practice, through the emphasis of the resolution of June 1942, were focused on radiology, but it was repeatedly pointed out that the problem is broader and concerns the relationship and customs of practice which have grown up over the years as laboratory procedures and, more particularly, radiology have come to occupy a more and more important place in the procedures and finances of hospitals.

At the conclusion of this conference of November 19 it was agreed that a further conference be held by a subcommittee appointed by the Chairman of the Board, to explore further the relationships of hospitals to medical practice.

The following committee was appointed: James Hamilton, Chairman, and Bert W. Caldwell, American Hospital Association; Father A. M. Schwitalla, Catholic Hospital Association; Edgar Blake, Protestant Hospital Association, and R. L. Sensenich and E. E. Irons, Trustees of the American Medical Association.

Mr. Hamilton later indicated that he would not be present, and Dr. R. C. Buerki was appointed by him, in his place. Dr. Buerki served as chairman of the committee. This committee and Dr. Olin West, Secretary of the American Medical

Association, met on Sunday, April 11, 1943 together with representatives of the American College of Radiology, L. S. Goin, V. W. Archer, W. E. Chamberlain, F. J. O'Brien, E. L. Jenkinson, Fay Squire, B. R. Kirklin, Dr. Stone and Mr. Mac F. Cahal.

Toward the conclusion of the sessions of this subcommittee, at which the views of radiologists and of hospitals were stated, there was discussion as to who should write a report and to whom it should be sent. It was pointed out that this group is a subcommittee of the conference committee consisting of the Joint Committee of the Hospitals and the Board of Trustees of the American Medical Association. Owing to the divergence of views as expressed by radiologists and hospital conferees, it was evident that an agreed report could not be formulated.

The hospital associations indicated that at least two of them would hold annual meetings after the week of June 7, 1943. It was also pointed out that the hospital members of this subcommittee were appointed through the Joint Hospital Association committee and not by the individual hospital associations, and that hence any report should go to the Joint Committee. They also preferred to have a report come to them for presentation to their associations. In order that progress might be made without further delay, it was agreed that the report would be made by the representatives of the Trustees of the American Medical Association for submission to the Board of Trustees and through them to the House of Delegates and to the three hospital associations.

In addition to certain general broader considerations of medical practice, such as the increasing activities of technicians in various laboratory procedures and the practice of anesthesias, pathology, and so on, it concerns chiefly a factual report of views expressed in the conference of Sunday, April 11, 1943 by representatives of radiology and of the hospital associations, initiated by the Board to "explore" and "clarify" the relationship of medical and hospital practice.

It will appear that present practices have grown up over the years with the development of more and more laboratory procedures in hospitals, the introduction of more specialized subgroups in medicine and the organization of various forms of group and individual hospital insurance plans.

The resolutions of the House of Delegates of June 1942 were read as follows:

"WHEREAS, The House of Delegates approved a resolution introduced by Dr. Harry H. Wilson at the 1941 session instructing the 'Board of Trustees of the American Medical Association . . . to confer with similar committees representing the American Hospital Association and the Catholic Hospital Association of the United States, the conjoint committees to study and submit reports to their respective national bodies, in which would be outlined platforms or principles designed to clarify the relation of medical services that may be offered in prepayment hospitalization and similar plans, the same to be in line with the basic principles laid down in the past by the House of Delegates and other authorities of the American Medical Association . . .' ; and

"WHEREAS, The Board of Trustees was requested in the same resolutions to 'proceed to these matters as expeditiously as may be possible'; and

"WHEREAS, Evidence of continued encroachment of hospitals into the practice of medicine is manifest in numerous group hospitalization plans which offer certain medical services on a service basis as a part of hospital care, and in plans adopted by numerous hospitals which include certain medical services in an 'all inclusive' per diem rate for hospital care; now therefore be it

"Resolved, That the House of Delegates reaffirms the principles enunciated in official resolutions over a period of many years opposing the practice of medicine by corporations or the interjection of a third party into the personal relationship and financial transaction between doctors and patients; and be it further

"Resolved, That hospital corporations should not be permitted to engage in the practice of medicine through the medium of employed physicians or to enter into contracts with any individual group, or agency, whereby the hospital agrees to furnish any medical services; and be it further

"Resolved, That, to the end that hospitals be discouraged from offering services of licensed physicians to patients on a contract or service basis, all fees for medical services rendered in hospitals should be collected by or on account of the physician rendering such service, and all physicians concerned in the care of a patient should give or send directly to the patient or other responsible party a statement showing charges for professional services rendered; provided, however, that an exception to the foregoing principle may be made in the case of a formally organized partnership of physicians which acts in the capacity of an individual; and be it further

"Resolved, That the definitions of medical service and hospital service as applied to the principles stated herein shall be consistent with those applied in previous declarations of the House of Delegates in which medical services are construed as the services rendered by licensed practitioners of medicine, and hospital service as limited to hospital accommodations such as bed, operation room, medicines, surgical dressings and general nursing care; and be it further

"Resolved, That the Board of Trusteee be urged to proceed to the clarification of these problems as requested by the House of Delegates at its last annual session."

It was pointed out that at the conference in December 1942 the agenda called for consideration, in addition to radiologic relationship to hospitals, of the effects of increasing lay influence in hospital practice by technicians in pathology, physical therapy, etc., and that gradually attention became focused on radiology (under the foregoing resolutions) as symptomatic of a number of other situations in which the same principles are involved.

Radiology is a department of medicine and the practice of radiology is the practice of medicine.

This principle is accepted by hospitals.

This principle does not seem to be carried out in practice, when hospitals include radiologic services in a comprehensive hospital insurance rate plan.

The House of Delegates has defined hospital care, and this definition does not include radiology and other medical practice.

During the discussions, the following facts and suggestions were developed:

However, a patient enters a hospital, requires radiologic service. The hospital is responsible for the machinery, for technicians, etc., and at the same time may pay the radiologists' salary.

Where is the line of technical and professional service to be drawn?

One solution would be to treat radiology like surgery. Charge operating room and anesthetic fee, etc. The surgeon sends his own bill. Likewise the radiologist might send his own bill, but if so then he should give up his salary. The hospitals maintain that by accepting a salary (and often this is not a small one) the radiologist *gives up the right* to send his bill.

Salaries of Radiologists.—One summarization of the radiologists of the radiologist-hospital relationship was as follows:

1. Radiology is practice of medicine.
2. Blue Cross plans should not include medical service.
3. It was assumed that all radiologists are more or less in agreement in opposition to the general principle of a salary arrangement between radiologists and hospitals.

The enforcement of the salary matter must be cooperative.

There was not agreement to the statement as to salary. It was believed by some who were present that a salary arrangement could be satisfactory.

Still another radiologist maintained that salary arrangement is satisfactory provided the hospital does not profit from the operation of the x-ray department.

The disposition of hospital profits from x-ray departments was discussed and it was noted that in some hospitals x-ray profits are used only for further development of the x-ray department. In other hospitals, profits from x-ray service are used in other departments.

X-Ray Charges and the Cost of Medical Care.—X-ray charges constitute a considerable fraction of the patient's hospital bill.

It was stated that the high charges by hospitals for x-ray work are maintained because they do not wish to compete with the radiologist in his downtown office. Owing to large volume, hospitals might well reduce their charges.

It was stated that one state association of radiologists had sent its official charges "to the hospitals with the idea that no hospital should charge less than that."

Radiology and Treatment.—Most of the discussion concerned x-ray service in diagnosis.

It was pointed out that many of the difficulties had arisen as a part of radiologic diagnosis.

Radiologic therapy requires the direct attention of the radiologist and yet the hospital treats x-ray diagnosis and therapy on the same basis and bills the patient for both.

The discussion returned to the question as to whether hospitals can properly include radiology, admittedly the practice of

medicine, as a hospital benefit in insurance plans. It was maintained that the hospitals should not hire the radiologist.

The following statement was presented as a solution by one of the conferees: "This committee recommends that all radiologists give up their salaried positions and that no hospital in good standing will be approved by the American Medical Association that hires its radiologist."

One of the radiologists present stated that he had no right to endorse any such plan but that he thought that radiologists would do so if the hospitals would agree. Regret was expressed that the radiologists do not have a degree of control over their membership which could enforce such a plan, and that the same is true with respect to hospital groups. It was also noted that American Medical Association approval of hospitals concerns educational matters only.

In the discussion that followed it was pointed out that neither the radiologists nor pathologists nor other groups have observed the principle under discussion.

The American Medical Association cannot settle the difficulty unless the members in these various groups will themselves live up to the principle. Men in special fields who have connections with hospitals whereby they are paid salaries or commissions, and the hospitals furnish machinery and apparatus, have stated that if they are compelled to observe the principle for which the American Medical Association has stood they will get out of the American Medical Association.

Types of Radiologic-Hospital Contracts.—1. The radiologist is employed on a salary by the hospital.

2. The radiologist leases space and apparatus from the hospital as a private practitioner.

3. The radiologist operates on some sort of commission basis. Or variations or combinations of 1, 2, and 3.

A. It was stated that 37 per cent of all radiologists are employed on a salary basis. (Later it developed that this figure included radiologists in government hospitals and in other full time positions.)

B. Nine per cent lease the departments on fixed rental.

C. Fifty-four per cent share gross receipts or net receipts with the hospital. Of this 54 per cent about half (27 per cent) are under legal relationships which make the radiologist a tenant, and about half (27 per cent) an employee of the hospitals. In either of these the radiologist can be on a percentage basis. The hospital is not legally liable for the radiologist if he is a tenant. With respect to technicians, the great proportion are employees of the hospitals. About 10 per cent of radiologists appoint and pay their own technicians.

At this point the following suggestions were offered:

1. That the per diem paid by the patient for hospitalization may not include radiologic services or any other medical services.

2. That bills to patients for radiologic services should be presented on the billhead of the radiologist and not on the billhead of the hospital.

The advantage of billing by the radiologist would be: (*a*) The patient would feel that he had personal service of the radiologist. (*b*) The radiologist would feel a greater sense of responsibility to the patient.

In objection, it was suggested that this billing by the radiologist would run counter to principles set forth by the Judicial Council of the American Medical Association in that the proceeds of the radiologist's bill would subsequently be split with the hospital. To avoid this the radiologist would have to give up his salary.

Nineteen per cent of the radiologists collect the fees in their own departments of the hospitals.

Blue Cross Plans.—The discussion next turned on Blue Cross plans. It was stated that one of the bases for approval of Blue Cross plans was that they should have the approval of local and county medical societies.

The College of Radiology has always maintained that radiologic service should not be included in hospital service, yet of seventy-seven Blue Cross plans approved by the American Hospital Association half of them guarantee medical service to subscribers.

A representative of the American Hospital Association stated that, in New York, Blue Cross plans were approved by the New York Medical Society. This was denied by the radiologists, in that vociferous objections have been raised. The five borough societies and the state society of New York have not officially approved the inclusion of medical service by the Associated Hospital Service of New York.

In Philadelphia the Philadelphia Medical Society went to court to prevent the inclusion of medical service in group hospitalization plans.

The difficulty seems to be that many members of county medical societies put their influence behind these group hospital plans, irrespective of any action they may have taken themselves as members of the societies.

If group hospital plans had not entered the picture, the other phases of relation of radiologists to hospitals might have been corrected slowly by evolution.

But if group hospitalization comes in and cements a branch of medicine as a part of hospital care and guarantees to subscribers not only bed, food and nursing care but also the services of a doctor, then the correction of other less objectionable features of historical origin becomes impossible.

The American Medical Association for years has pointed out the dangers which have developed in these plans, both group hospital and medical service plans, and has been called obstructionist and reactionary.

Another objection to the inclusion of x-ray service in hospital service plans is that such inclusion inevitably leads to deterioration in quality of radiologic care. There is overutilization of the radiologist's services, with a lick and promise type of radiologic care.

If the hospitals would take a stand against inclusion of radiology in the per diem charge, real progress toward a solution of the difficulties would be made.

Instances of overutilization were cited.

The radiologists then asked that the representatives of the hospital associations recommend to their organizations that Blue Cross plans do not include professional services, i. e. radiology, etc.

In the discussion it appeared that the American Hospital Association is willing to include medical services for sale by the Blue Cross plan if the local society approves it.

The American Hospital Association "has to deal with the practical thing that is happening." "The local medical society in Michigan through the Blue Cross plan is selling medical care."

"The Blue Cross plan in many respects is a measure of the attitude toward medical practice in the given community."

The Blue Cross plan is a name under the control of the Hospital Commission of the American Hospital Association.

"If a hospital plan refuses to abide by the rules laid down by that commission, the commission can deny that plan the right to use the words Blue Cross plan and . . . loses chance to participate in national publicity."

"The Council of the California Medical Society rebuked the Intercoast Association and threatened to withdraw the approval, and they said 'Go ahead, we will still settle contracts.'

"The Commission on Hospital Service of the American Hospital Association on February 11 adopted a uniform national contract recommending to all Blue Cross plans the inclusion of complete pathologic service and anesthesia and radiology up to $15."

It was stated that the American Hospital Assocation has not yet approved this recommendation but it is under consideration.

The Blue Cross plan included medical service as a "selling point." Blue Cross plans have to compete with old line insurance.

In the discussion of the nature of a report that might be offered by those representing the hospital associations and the

Board of Trustees of the American Medical Association the following proposals were considered: "The report might well call attention to and say a word of caution about the general encroachment into the field of medical responsibility by nonmedical people as a danger to the future health of the country, as a danger to the medical profession.

"Secondly, to call attention and to condemn the institutional practice of medicine through certain staff appointment procedures that have since taken place.

"Thirdly, the implication of hospital contracts for medical practice, and the validity and ethical character of those contracts must be judged by the principles laid down by the Judicial Council for the regulation of contract practice of the physician. In other words, just because a physician makes a contract with a hospital is no reason why the principles laid down by the Judicial Council for contract practice are to be held in abeyance. Those are fundamental in medical practice.

"Fourthly, perhaps, emphasize the vast extent of medical responsibility in certain technological procedures that are now being entrusted to nonmedical people in the hospital."

Question was raised as to whether points 2 and 3 would be kindly received by the American Hospital Association."

Historical Review and Comment

The subject matter considered followed the direction of resolutions presented to the House of Delegates:

1. The resolutions introduced by Dr. E. H. Skinner, Section on Radiology, at the annual session of the House of Delegates at Atlantic City, N. J., June 8-12, 1942:

WHEREAS, The House of Delegates approved a resolution introduced by Dr. Harry H. Wilson at the 1941 session, instructing "the Board of Trustees of the American Medical Association . . . to confer with similar committees representing the American Hospital Association and the Catholic Hospital Association of the United States, the conjoint committees to study and submit reports to their respective national bodies, in which would be outlined platforms or principles designed to clarify the relation of medical services that may be offered in prepayment hospitalization and similar plans, the same to be in line with the basic principles laid down in the past by the House of Delegates and other authorities of the American Medical Association . . ."; and

WHEREAS, The Board of Trustees was requested in the same resolutions to "proceed to these matters as expeditiously as may be possible"; and

WHEREAS, Evidence of continued encroachment of hospitals into the practice of medicine is manifest in numerous group hospitalization plans which offer certain medical services on a service basis as a part of hospital care and in plans adopted by numerous hospitals which include certain medical services in an "all inclusive" per diem rate for hospital care; now therefore be it

Resolved, That the House of Delegates reaffirms the principles enunciated in official resolutions over a period of many years opposing the practice of medicine by corporations or the interjection of a third party into the personal relationship and financial transaction between doctors and patients; and be it further

Resolved, That hospital corporations should not be permitted to engage in the practice of medicine through the medium of employed physicians or to enter into contracts with any individual, group or agency whereby the hospital agrees to furnish any medical services; and be it further

Resolved, That, to the end that hospitals be discouraged from offering the services of licensed physicians to patients on a contract or service basis, all fees for medical services rendered in hospitals should be collected by or on the account of the physician rendering such service, and all physicians concerned in the care of a patient should give or send directly to the patient or other responsible party a statement showing charges for professional services rendered; provided, however, that an exception to the foregoing principle may be made in the case of a formally organized partnership of physicians which acts in the capacity of an individual; and be it further

Resolved, That the definitions of medical service and hospital service as applied to the principles stated herein shall be consistent with those applied in previous declarations of the House of Delegates in which medical services are construed as the services rendered by licensed practitioners of medicine, and hospital service as limited to hospital accommodations such as bed, operation room, medicines, surgical dressings and general nursing care; and be it further

Resolved, That the Board of Trustees be urged to proceed to the clarification of these problems as requested by the House of Delegates at the last annual session.

2. The Reference Committee on Legislation and Public Relations in joint meeting with the Reference Committee on Miscellaneous Business considering these resolutions reported that the resolutions introduce no new principles not already accepted by this House at former sessions and ask only definite clarification and study by the Board of Trustees. The joint committee recommended the adoption of the resolutions.

3. The concluding paragraph of Dr. Skinner's resolutions refers to resolutions introduced by Dr. Harry H. Wilson, California, at the Cleveland session of the House of Delegates in 1941:

Resolutions Requesting Appointment of Committee to Confer with Committees of Hospital Associations:

Dr. Harry H. Wilson, California, presented the following resolutions, which were referred to the Reference Committee on Legislation and Public Relations:

WHEREAS, In the drafting of policies or contracts to cover medical and hospitalization services of nonprofit and other prepayment organizations it is of primary importance that the agreements or contracts shall make a clear differentiation of medical and hospitalization services that will permit physicians who give pathologic laboratory, x-ray laboratory, anesthesia or similar services, to maintain their physician-patient relationship and their own status as physician specialists; and

WHEREAS, In many plans designed to promote more adequate service among lower income groups of citizens it has seemingly been difficult to maintain the necessary professional distinctions concerning such medical work, and the ways and means whereby compensation shall be made therefor; now therefore be it

Resolved, That the California Medical Association through its constituted authorities herewith requests the House of Delegates of the American Medical Association to instruct the Board of Trustees of the American Medical Association to appoint a committee of such number as may be deemed advisable to confer with similar committees representing the American Hospital Association and the Catholic Hospital Association of the United States, the conjoint committees to study and submit reports to their respective national bodies in which would be outlined platforms or principles designed to clarify the relation of medical services that may be offered in prepayment hospitalization and similar plans, the same to be in line with the basic principles laid down in the past by the House of Delegates and other authorities of the American Medical Association; and be it further

Resolved, That the Board of Trustees be requested to proceed in these matters as expeditiously as may be possible and to submit the committee's report with such suggestions and/or recommendation that the Board of Trustees may wish to attach thereto, at the next annual session of the American Medical Association, the Board of Trustees to be authorized in the interim to advise the constituent state associations of the American Medical Association concerning tentative or other agreements that may have been reached.

The reference committee recommended the approval of the resolutions and added:

Medical Service Plans and the Specialty Societies: Your reference committee further recommends that the specialty societies, such as those composed of radiologists, pathologists and anesthesiologists, recommend to their members that they defer entering into contractural relationships with hospitals involved in medical service plans until the relationship has been thoroughly clarified as requested in the resolutions from the California Medical Association.

4. The resolution presented by Dr. Lyell C. Kinney, California, at the Atlantic City session, June 1942.

Resolutions on Improvement of Relations Between Physicians and Insurance Companies:

WHEREAS, It is desirable that physicians and insurance companies cooperate to the fullest extent, especially in the interest of persons covered by health and accident insurance; and

WHEREAS, A serious situation has arisen in the administration of certain health and hospitalization schemes whereby medical services are being billed under the term "hospital services" and are being paid for by insurance companies as they are labeled hospital services; and

WHEREAS, The continuation or extension of such practices will inevitably lead to the inclusion of any type of medical service under the label "Hospital Service," at the convenience of the corporations involved and to the detriment of medical care; now therefore be it

Resolved, That the House of Delegates of the American Medical Association hereby requests insurance companies to cooperate with the organized medical profession to the end that hospitalization policies shall include only hospital benefits. If the inclusion of indemnification for medical services, such as surgery or radiology, is desired, then payment of such shall be made only on receipt of certified statement from a physician that he has rendered such. Fees for medical services should be paid to physicians via indemnity to the assured or by check payable jointly to assured and physician. This practice should be maintained irrespective of whether a hospital chooses to bill for medical services as a part of its hospital bill; and be it further

Resolved, That the House of Delegates of the American Medical Association requests hospitals and physicians to cooperate with it in this important step by seeing that bills for hospital and medical services are clearly distinguished; the latter should bear the name of the physician rendering the service to indicate clearly that the charge is for medical service.

5. The Reference Committees on Miscellaneous Business and Legislation and Public Relations acting jointly reported that these resolutions involve many additional technicalities and require prolonged and delicate negotiations with insurance carriers which will be time consuming and difficult of attainment. So before committing our organization definitely to the line of action which these resolutions demand, your joint committee recommends that the resolutions be referred to the Board of Trustees for study by itself and the Bureau of Medical Economics as to the facts, feasibility of action requested and as to ways and means of accomplishing the desired results. Your joint committee does not at the present time recommend the passage of these resolutions in their present form. A separate report is being submitted by the Board of Trustees concerning these recommendations.

6. As the three resolutions quoted, in similar terms, requested study, clarification and outlining of principles and referred to resolutions introduced in earlier years, it was obviously necessary to examine the records of previous actions by the House of Delegates, reports of the Board of Trustees and Bureau of Medical Economics and the extensive studies of various hospital and insurance plans continuously being carried on by that Bureau.

Reports of the Council on Medical Education and Hospitals, the Judicial Council, Bureau of Legal Medicine and Legislation and the Committee on Legislative Activities were also studied. To enumerate or copy in their entirety all the actions of these respective agencies of the American Medical Association relating to the subject matter of these resolutions would be too lengthy for this report.

As early as 1931 the Judicial Council in its report to the House of Delegates disapproved of the collection by hospitals of fees for professional services to patients and payment by them to the attending physicians. The House of Delegates suggested that this matter be studied by the Judicial Council or some special committee. The matter was referred to the newly created Bureau of Medical Economics, whose earliest activities were directed to methods of distribution of medical care.

Reports of Studies of Plans and Advice in Avoidance of Dangerous Patterns Followed Each Year

In 1934 at the Cleveland session a resolution introduced by Dr. Albert Soiland, Section on Radiology, stated that some hospitals were doing "collective bargaining for x-ray business" to the detriment of their staff roentgenologists. The reference committee considered "the questions involved in the resolution as being primarily ethical rather than truly economic and for this reason, while recognizing the evils, refrains from direct comment concerning them and recommends that the resolutions be referred to the Council on Medical Education and Hospitals for such action as its wisdom may indicate."

As a result of study by the Bureau of Medical Economics, the ten basic principles for guidance in the formulation of any method of distribution of medical service were presented to the House of Delegates at the 1934 annual session and approved by it as follows:

First: All features of medical service in any method of medical practice should be under the control of the medical profession. No other body or individual is legally or educationally equipped to exercise such control.

Second: No third party must be permitted to come between the patient and his physician in any medical relation. All responsibility for the character of medical service must be borne by the profession.

Third: Patients must have absolute freedom to choose a legally qualified doctor of medicine who will serve them from among all those qualified to practice and who are willing to give service.

Fourth: The method of giving the service must retain a permanent, confidential relation between the patient and a "family physician." This relation must be the fundamental and dominating feature of any system.

Fifth: All medical phases of all institutions involved in the medical service should be under professional control, it being understood that hospital service and medical service should be considered separately. These institutions are but expansions of the equipment of the physician. He is the only one whom the laws of all nations recognize as competent to use them in the delivery of service. The medical profession alone can determine the adequacy and character of such institutions. Their value depends on their operation according to medical standards.

Sixth: However the cost of medical service may be distributed, the immediate cost should be borne by the patient if able to pay at the time the service is rendered.

Seventh: Medical service must have no connection with any cash benefits.

Eighth: Any form of medical service should include within its scope all legally qualified doctors of medicine of the locality covered by its operation who wish to give service under the conditions established.

Ninth: Systems for the relief of low income classes should be limited strictly to those below the "comfort level" standard of incomes.

Tenth: There should be no restrictions on treatment or prescribing not formulated and enforced by the organized medical profession.

In 1935 at the Chicago special session, in a resolution presented by Dr. Albert Soiland, the House of Delegates was asked to emphasize again particularly the necessity for separate provision for hospital facilities and the physician service and that payment for medical services, whether by prepayment plans, instalment purchase or so-called voluntary insurance plans, must hold an absolutely distinct remuneration for hospital care on the one hand and the individual personal scientific ministrations of the physician on the other hand. The matter was referred to the Bureau of Medical Economics for study of existing plans.

At Atlantic City in 1935 the House of Delegates approved the report of the Bureau of Medical Economics cautioning against the national development of such schemes as would lead sooner or later to an inclusion of medical service in one form or another with inevitable deterioration in the quality of service.

At this meeting also the sixth one of the basic principles was changed to read "In whatever way the cost of medical service may be distributed, it should be paid for by the patient in accordance with his income status and in a manner that is mutually satisfactory."

In 1936 at the Kansas City session of the House of Delegates resolutions were introduced by Dr. Albert Soiland, Section on Radiology, titled Resolutions on Taking Steps That Will Result in Practice of Medicine Being Conducted by Physicians and Not by Hospitals:

Whereas, Certain lay groups in this country are arranging for or attempting to arrange for the provision of diagnostic medical services along with and as part of hospital services; and

Whereas, The provision of such diagnostic medical services must inevitably foster fundamental changes in the practice of medicine; and

Whereas, The American Medical Association is of the opinion that the practice of medicine should at all times be confined to fully licenced physicians; and

Whereas, Chapter III, article VI, section 4 of the Principles of Medical Ethics sets forth the following:

"It is unprofessional for a physician to dispose of his professional attainments or services to any lay body, organization, group or individual, by whatever name called, or however organized, under terms or conditions which permit a direct profit from the fees, salary or compensation received to accrue to the lay body or individual employing him. Such a procedure is beneath the dignity of professional practice, is unfair competition with the profession at large, is harmful alike to the profession of medicine and the welfare of the people, and is against sound public policy."

Now therefore be it

Resolved, That the House of Delegates of the American Medical Association is unalterably opposed to such practices; and be it further

Resolved, That the House of Delegates of the American Medical Association is opposed to the division of any branch of medical practice into so-called technical and professional portions; and be it further

Resolved, That the Council on Medical Education and Hospitals of this Association be and is hereby authorized and directed to take such steps as will result in the practice of medicine being conducted by physicians and not by hospitals; and be it further

Resolved, That the said Council be and hereby is directed annually to report to this House of Delegates such progress as it is able to achieve from time to time.

Resolutions also introduced at the 1936 session by Dr. Edward M. Pallette, California, titled Resolutions Disapproving Division of Any Branch of Medicine into Technical and Professional Portions, stated that certain lay groups are endeavoring to arrange for the provision of diagnostic medical service along with and as a part of hospital service and pointed out that such fundamental changes in the practice of medicine may well result in deterioration of our present medical standards and especially in deterioration in the quality of medical care furnished to hospital patients and that it is the official policy of the House of Delegates that it disapproves of the division of any branch of medicine into technical and professional portions. It directed also that the resolutions be brought to the attention of the American Hospital Association and its affiliated groups to the end that existing arrangements permitting division in medical practice be terminated as speedily as possible.

At the same session Dr. Francis F. Borzell, Pennsylvania, introduced resolutions referring to the previous actions of the House of Delegates in defining the practice of radiology for diagnostic or therapeutic purposes as the practice of medicine. They referred also to action of the Council on Medical Education and Hospitals in establishing a standard for a radiologic department in approved hospitals and requiring that the department be under the supervision and control of a competent radiologist. The resolutions stated that it was alleged that certain hospitals were proposing to divide the practice of radiology into professional and technical services. The House of Delegates took action disapproving any efforts to divide the service in that manner as "being detrimental to the best interests of the public, the medical profession and the hospitals. The action further directed that copies of the resolutions be sent to the American Hospital Association, the Catholic Hospital Association, the American College of Surgeons and the American College of Radiology.

The reference committee to which the resolutions of Dr. Soiland, Dr. Pallette and Dr. Borzell were referred reported as follows:

1. It reiterates the principle enunciated by the House of Delegates at Cleveland in 1934 "That the Practice of radiology, whether for diagnostic or therapeutic purposes, constitutes in fact the practice of medicine." The action of the House of Delegates in 1925 establishing a section on radiology confirms this principle.

2. It further recommends that "all services connected with the practice of radiology be under the direct control and supervision of the medical profession, and this same principle pertains to other technical and professional services."

In 1937 at the Atlantic City session the Bureau of Medical Economics in its report to the House of Delegates presented a comprehensive statement of its study of the various group hospitalization plans and submitted ten principles of organization and administration for guidance in establishment and direction of group hospitalization plans.

1. The plan of organization should conform to state statutes and case law. The majority of the governing body of the hospital insurance plan should be chosen from among members of official hospital groups and members of medical societies. Great care should be taken to assure the nonprofit character of these new ventures.

2. The plan should include all reputable hospitals. The qualifications of the participating hospitals should be closely supervised. Member hospitals should be limited to those on the Hospital Register of the American Medical Association or to those approved by the state departments of public health or other state agencies in those states in which there is approval, registration or licensing of hospitals.

3. The medical profession should have a voice in the organization and administration of the plan. Since hospitals were founded to serve as facilitating means to the practice of medicine, the medical profession must concern itself intimately with plans likely to affect the relations of hospitals to physicians.

4. The subscriber's contract should exclude all medical services—contract provisions should be limited exclusively to hospital facilities. If hospital service is limited to include only hospital room accommodations, such as bed, board, operating room, medicines, surgical dressings and general nursing care, the distinction between hospital service and medical service will be clear.

5. The plan should be operated on an insurance accounting basis with due consideration for earned and unearned premiums, administrative costs and reserves for contingencies and unanticipated losses. Supervision by state insurance departments has been advantageous for both the buyer and the seller of insurance contracts. Laws permitting the formation of hospital service corporations should not remove the benefits of such supervision nor violate the principles enumerated.

6. There should be an upper income limit for subscribers. If group hospitalization plans are designed to aid persons with limited means to secure hospital services, they should render such service at less than regular rates. If no consideration in rates is made for persons with limited means, group hospitalization plans lose their altruistic purpose and there may be little justification for an income limit.

7. There should be no commercial or high pressure salesmanship or exorbitant or misleading advertising to secure subscribers. Such tactics are contrary to medical and hospital ethics and are against sound public policy.

8. There should be no diversion of funds to individuals or corporations seeking to secure subscribers for a profit. The moment hospitals lose their traditional character as institutions of charity and humanitarianism, the entire voluntary hospital system will break down.

9. Group hospitalization plans should not be utilized primarily or chiefly as means to increase bed occupancy or to liquidate hospital indebtedness. Such plans, if they are necessary, should place emphasis on public welfare and not on hospital finances.

10. Group hospitalization plans should not be considered a panacea for the economic ills of hospitals. They can serve only a small portion of those persons needing hospital services. Hospitals must continue to develop efficient methods of administration and service independent of any insurance method of selling their accommodations.

At the same session a resolution introduced by Dr. C. W. Stone, Ohio, requested the House of Delegates of the American Medical Association to clarify its policy in the question of group hospitalization, especially in the matter of defining and enumerating the services which should not be included because they are definitely medical services. This resolution was introduced after action by the House of Delegates of the Ohio State Medical Association because of stated confusion and controversy in many group hospitalization plans.

The reference committee reported that it is advisable to define hospital facilities rather than to attempt a comprehensive definition of medical practice.

"It is recommended therefore that the contract benefit provided by group hospitalization insurance should be limited to the room, bed, board, nursing facilities and routine medicines ordinarily provided by hospitals."

"Your reference committee would refer to the report of the Board of Trustees, page 22, principle 4, which was adopted by this House of Delegates. In that paragraph the limitations of hospital service are well defined. Your reference committee reaffirms this definition of hospital care and recommends its application to contracts for group hospitalization. In regard to certain benefits offered by many hospital insurance plans, combining professional and technical services, your reference committee is in complete sympathy with those who would make every possible provision to prevent inclusion of any and all types of service involving medical care."

"It is the opinion of your reference committee that further conference between interested medical groups and the American Hospital Association would be of definite value in clarifying the twilight zone between hospital service and medical care."

The report of the Bureau of Medical Economics discussed group hospitalization plans at length. In considering the reasons leading to the formulation of principles for guidance of those seeking to establish group hospital plans, the Bureau report stated "Notwithstanding the efforts of medical societies and this Bureau, as well as the reports of the Judicial Council and the action of the House of Delegates on group hospitalization at the Kansas City session to develop principles for the guidance of the group hospitalization movement, few, if any, of the plans exclude all medical services from their group hospitalization contracts. The extent to which medical services are included in the hospital service contracts is shown in the report of the Bureau."

The report of the Council on Medical Education and Hospitals to the House of Delegates in 1937 stated "In cooperation with the Judicial Council, efforts are being made to secure information concerning the tendency of some hospitals to engage in the practice of medicine through the device of hiring physicians to care for patients while the hospital itself collects the fee for the services rendered."

In the same session the report of the Judicial Council stated "The 1935 House of Delegates recommended that the 'Council on Medical Education and Hospitals, together with the Judicial Council, formulate a plan whereby all those associated in the delivery of medical service be included in the investigation of hospitals for classification and that approval be based in the future on the ethical practices in the institution as well as on its scientific work.' . . . Consequently the Judicial Council met with the Council on Medical Education and Hospitals in February this year and after thorough discussion presented the basis of a plan for the desired cooperation of the two councils. . . . The problem, which involves many difficulties, will require some time for its solution."

Continuing, the report states "Economic subjects invariably involve ethical questions. . . ."

The report of the Judicial Council further discussed paragraphs from article VI, chapter III, Principles of Medical Ethics, referring to "compensation," "conditions of practice," "contract practice" and certain features or conditions which if present make a contract unethical. Minor changes were made chiefly in the order and heading of certain paragraphs. Section III was made to read "By the term 'contract practice' as applied to medicine is meant the carrying out of an agreement between a physician or a group of physicians, as principals or agents, and a corporation organization, political subdivision or individual, to furnish partial or full medical services to a group or class of individuals on the basis of a fee schedule, or for a salary or a fixed rate per capita." The House of Delegates approved the changes.

The 1938 session of the House of Delegates at San Francisco was given a large amount of factual material by the Bureau of Medical Economics as a result of the national survey of need for medical care. Group hospitalization was also reported on and a comprehensive study of "Group Hospitalization Insurance was published." The background for some unsatisfactory relations between hospitals and physicians was discussed and it was pointed out that efforts to improve hospital finances must not destroy the quality or opportunity for improvement of medical services. The following paragraphs are quoted as a clear statement of some reasons for opposition to dangerous tendencies: "It is unethical, and therefore contrary to good public policy, for hospitals to participate in the practice of medicine in order to obtain an income to finance other hospital activities or to attempt to lower the cost of special medical services by methods that impair the quality of the service or prevent the development of an improved service. Where such a situation exists the patients may be overcharged for the medical services of the medical department, the medical specialists may be receiving an insufficient income, or the services may not be maintained at a proper standard because of the use of cheaper technical assistants or because of inadequate equipment or insufficient or underpaid personnel. The proper method of remuneration for the hospital and the physician should enable the hospital to provide adequate building, equipment and personnel without necessitating an attempt to control or to employ physicians and should permit the physician to schedule his charges so as to make it possible for all patients to have easy access to necessary special medical services. In keeping with the ethics of the medical profession, both hospitals and physicians must place service first and financial considerations second."

The reference committee approved the report of the Bureau of Medical Economics and recommended that the ten principles adopted in 1937 as the policy of the American Medical Association be amplified by the addition of the following statements to principle four: "If for any reason it is found desirable or necessary to include special medical services such as anesthesia, radiology, pathology or medical services provided by outpatient departments, these services may be included only on the condition that specified cash payments be made by the hospitalization organization directly to subscribers for the cost of such services."

At the same meeting of the House of Delegates in San Francisco, Dr. Francis F. Borzell, Pennsylvania, introduced the following resolutions:

WHEREAS, the American Medical Association has through its House of Delegates and its various bureaus and councils from time to time propounded certain principles of ethics and established standards of relationship looking toward the maintenance of the highest quality of professional service both in private practice and in hospitals; and

WHEREAS, Many of these pronouncements refer specifically to those special branches of medicine involving somewhat unusual relationship between hospitals, institutions and the physician practicing these specialties in the hospital; and

WHEREAS, Certain usages have sprung up which are tending to involve ethical and legal considerations; and

WHEREAS, It would appear to be highly desirable and in the best interests of good medical practice and sound public policy to have certain of the aforementioned pronouncements clarified, codified and in some instances reiterated; be it

Resolved, That the Council on Medical Education and Hospitals be requested to study the status of clinical and pathologic laboratories, radiologic departments and physical therapy departments in hospitals and institutions with a view toward standardizing the relationship of these services to these institutions and when necessary reaffirming principles of ethics involved in these relationships; and be it further

Resolved, That the Council be authorized to confer with such agencies as are deemed necessary to arrive at these conclusions.

The Council on Medical Education and Hospitals, to which these resolutions were referred, reported as follows:

"The resolutions of Dr. Francis F. Borzell, Pennsylvania, Dr. Charles H. Goodrich, New York, and Dr. E. H. Skinner, Section on Radiology, which were referred to the Council on Medical Education and Hospitals, all dealing more or less with the same subject, were considered together. The proposers of these resolutions, the delegates from the Massachusetts Medical Society, members of the California Medical Association and others met with the Council to express their views concerning the problems that concern the practice of medicine in hospitals by radiologists, pathologists and anesthetists. These problems have been rendered more acute by the rapid extension of systems of group hospital insurance within the last few years.

"The Council believes that these problems are of vital concern to the medical profession; that unwise decisions at this time may lead to consequences that would be disastrous to physicians and to the public alike, and that, therefore, a serious study should be made of existing relationships between hospitals and the physicians practicing therein, especially in the departments of anesthesia, radiology, pathology and physical therapy, with a view to standardizing the relationship of these services to the hospital and, where necessary, of reaffirming the principles of ethics involved.

"The Council recommends that it, jointly with the Bureau of Medical Economics, be authorized to undertake these studies and to confer with other interested agencies in order that it may be in a position to establish ethical standards for the practice of medicine by physicians holding positions in hospitals and to prevent the exploitation of either the public or the profession. If during this study it is revealed that hospitals registered and approved by the Council are exploiting the public or the profession, such approval may be revoked."

At the 1939 session of the House of Delegates in St. Louis the Council on Medical Education and Hospitals reported that, owing to extra work created by the National Health Conference and action against the Association in the District of Columbia, the Council was not in a position to make a complete report on medical practice in hospitals in accordance with the instructions of the House of Delegates in 1938 but stated that "an

agreement has been reached with a representative group of radiologists as to the definition of the function of the radiologist in the hospital." This definition is incorporated in the Revised Essentials of a Registered Hospital.

These Essentials of a Registered Hospital are familiar to you. Radiologic standards for service to the patients and educational purposes are clearly defined. It is stated also that "It shall not be the policy of the hospital to make a profit from the department of radiology." Conformance to the Principles of Medical Ethics of the American Medical Association is also required to become eligible for registration.

The Bureau of Medical Economics reported at length on the progress of Group Hospitalization Plans.

It was also reported that "The American Hospital Association at its last session approved the extension of hospital care insurance plans to include medical fees in hospital practice when the arrangements are approved by the local county medical society." It was stated also that a joint report of the three national hospital associations has suggested that federal legislation be sought to permit the licensing of hospital service corporations similar to the federal licensing of credit unions. It was contemplated that such federally licensed hospital service corporations would be the proper agencies to enter into contracts with the government for the hospital care of the indigent sick.

These matters were discussed at a conference of the board of trustees of the American Hospital Association and representatives of the Catholic Hospital Association and the American Protestant Hospital Association on the invitation of the Board of Trustees of the American Medical Association at the offices of the American Medical Association on Feb. 15, 1939. The following paragraphs are taken from the report to the House of Delegates: "Various matters of mutual interest to the groups represented were frankly discussed, and it was most gratifying to note that there was decided unanimity of opinion with respect to many phases of the general subject of medical care in hospitals, even though there may be some differences between the basic policies of one or more hospital associations and those of the American Medical Association.

"Among questions that received consideration at this conference were those having to do with group hospitalization and an apparent tendency on the part of some of the hospital groups to include both special and general medical service in contracts offered to their members as well as other questions of major importance and present interest." During the conference the following resolution was unanimously adopted by the representatives of the three hospital associations:

"The representatives of the American Hospital Association, the Catholic Hospital Association and the American Protestant Hospital Association here present desire to express to the Board of Trustees of the American Medical Association their confidence in the leadership of the medical profession in furthering the excellence of medical service and in aiding the solution of problems of the distribution and provision of medical care."

At a later time the following resolution was approved by all those who participated in the conference:

"It is moved that the following be the sense of this meeting: This gathering of the Trustees of the American Medical Association with representatives of the American Hospital Association, the Catholic Hospital Association and the American Protestant Hospital Association expresses its gratification on the unanimity of opinion developed concerning many phases of the health problems of the nation achieved by mutual discussion. It is recommended to the American Medical Association, the American Hospital Association, the Catholic Hospital Association and the American Protestant Hospital Association that such joint meetings of their representatives be held for the consideration of problems of mutual concern.

"It was not possible that all matters of mutual interest to those who participated in the conference could be fully considered, nor did it seem wise to undertake at the time to examine minutely the reasons for some possible differences in the policies of all the organizations represented in the conference. There seemed to be unanimous agreement that the physician is supreme in the hospital in all matters pertaining to medical service rendered in hospitals."

A tabulation of information was submitted under the title of Economics of the Practice of Radiology in 1939. This was in response to a recommendation by the House of Delegates that a joint study be made by the Council on Medical Education and Hospitals and the Bureau of Medical Economics to determine the existing relations between the hospitals and physicians practicing in them. Departments of anesthesia, radiology, pathology and physical therapy were especially to be studied in order that ethical standards might be established to prevent the exploitation of either the public, the hospitals or the physicians.

This report was based on completed schedules returned by 876 out of 1,434 members of the four radiologic societies, the American Roentgen Ray Society, the American Radium Society, the Radiological Society of North America and the American College of Radiology. The tabulation contains much valuable factual material and has been made available to those interested.

The Council on Medical Education and Hospitals at the 1940 session referred to the report of the Economics of Radiology but stated that it was not yet in a position to make a final report on the practice of pathology, anesthesia and physical therapy.

Mobilization of the profession for army and civilian medical care and problems connected with medical education and personnel have prevented a complete resurvey of this matter by the Bureau of Medical Economics and the Council on Medical Education and Hospitals. However, information has been accumulated and reports have been made from time to time. Apparently no new principles are involved and present developments may be described as a continuation of tendencies previously pointed out.

The hospital associations have repeatedly restated their confidence in the leadership of the medical profession in maintaining high standards of medical service and in aiding in the solution of problems of distribution and provision of medical care.

In 1939 the American Hospital Association published the Principles of Relationship Between Radiologists, Hospitals and Pathologists. Those concerning the relationship of radiologists and hospitals are as follows:

1. The radiological service of the hospital shall be maintained primarily for the benefit of the sick.

2. Every hospital radiological department should be under the direction of a competent radiologist, preferably a diplomate of the American Board of Radiology or one who is working toward that objective. If, because of size or isolation, such arrangement be not feasible, some member of the general medical staff trained in radiology should be in charge and a consultation service arranged with a nearby radiologist.

3. The radiologist is entitled to recognition as a professional member of the medical staff and as head of a hospital department.

4. The preservation of the unity of the hospital and its component departments and activities is an essential administrative principle. This principle can be maintained without any infringement on professional rights or professional dignity.

5. Inasmuch as no one basis of financial arrangement between a hospital and its radiologist would seem to be applicable or suitable in all instances, that basis should be followed which would best meet the local situation. This may be on the basis of salary, commission or privilege rental, but in no instance should either the hospital or the radiologist exploit the other or the patient.

6. When an arrangement is effected whereby the radiologist of the hospital pays rental for space and service, cares for nonpay patients and in return retains all private fees collected, such contract should clearly cover the matter of depreciation of equipment, replacements and additions, should protect the radiologist against excessive nonpay work and should take into consideration the "good will" by virtue of which a large proportion of the paying clientele is attracted.

These principles were reported to have had the approval of (1) the board of trustees of the American Hospital Association, (2) the Radiological Inter-Society Committee (officially representing the American College of Radiology, the American

Roentgen Ray Society, the Radiological Society of North America and the American Radium Society), (3) the Council on Medical Education and Hospitals of the American Medical Association and (4) the American College of Surgeons.

It was not stated that the following paragraph was submitted to the American Medical Association for approval:

"The American Hospital Association and the Radiological Inter-Society Committee view with disapproval the proposal that the actual cost of films and associated overhead be separated from the professional charges of the radiologist or that the responsibilty for this department be divorced from the hospital. While in many instances this would be a financial relief to the hospitals, it would probably result in frequent omission of the radiological consultation with a specialist in radiology, would mean less efficient radiological service with potential legal complications and would tend to create difficulties with national and other organizations requiring supervision of the radiological work by a competent radiologist."

The American College of Radiology prepared a "Manual of Desirable Standards for Hospital Radiological Departments" and this was submitted to the Council on Medical Education and Hospitals of the American Medical Association, which was reported to have expressed accord with these statements on May 17, 1939. There is no record that the standards of this manual were approved by the various hospital associations. Fiscal arrangements are defined as follows:

"Radiology is a special type of medical practice and the physician practicing radiology requires special training just as do his fellow medical and surgical specialists. His conduct shall be subject to the same principles of medical ethics (those of the American Medical Association) as govern his fellow physicians."

"The practice of radiology in a hospital is essentially the same as in an office building. Assuming that the executive medical staff of the hospital has selected the radiologist or radiologists whom it regards as the most desirable for its institution, the said radiologist or radiologists should conduct his or their practice in respect to private patients just as do his or their colleagues. It is desirable that the physician bill his private patients on his own billhead, adjusting his fees according to the ability of his patients to pay and making his own collection arrangements. When, for purposes of convenience, the fee is collected by the hospital cashier, it shall be done on the physician's billhead or under his name in order to comply with the professional nature of the service.

"The fees charged for radiological services shall be under the control of the radiologist. All systems of rebates, discounts, etc., shall be considered unethical, except that, where the patient's economic status is the determining factor, the radiologist like his fellow physician in medicine or surgery, may waive part or all of the fee.

"In the average private hospital the most satisfactory arrangement is one in which the radiologist leases the space or space and equipment from the hospital, paying the latter a monthly rental therefor. The amount of the monthly rental should be determined after a fair appraisal of the cost for maintenance of the department by a cost accountant, and should include every reasonable item. Provisions should be made for an amortization fund for replacement of equipment, if this is owned by the hospital. Some institutions may find it more convenient to base the hospital cost upon a patient basis. In such cases the cost per patient should be determined and the radiologist practicing in the department should pay the hospital that amount for each private patient whom he examines or treats in the department. Under either of these plans the hospital is protected against any loss, and the medical staff is permitted to carry on its practice in the most ethical and satisfactory manner for all concerned.

"If, pending the clarification of details concerning the lease agreement, it is decided by the hospital and the radiologist that a percentage arrangement should be made, such an agreement may be ethically reached. Inasmuch as a hospital is not entitled to profit from the fees earned by physicians practicing in its purlieu, it should not be the policy of the hospital to make a profit from the x-ray department. However, the hospital should receive a reasonable interest return on its investment in space and such equipment as it furnished. The percentage division should be applied to the gross receipts of the department and not the net, as this would give prima facie evidence that the hospital was enjoying a profit from the professional services rendered by those in the department. The distribution will vary according to the nature of the institution, the amount of charity work handled, the actual cost of maintenance of the department, and other items; in the great majority of institutions, however, the hospital's cost should be defrayed with 50 per cent of the gross receipts, or less.

"In a few institutions (for example, where all staff members are on a salary and such an arrangement is countenanced by the American Medical Association) it may be necessary to adopt a fixed compensation plan. This, however, is the least desirable of the three acceptable types of fiscal arrangement and provides opportunity for strife and misunderstanding between the medical staff and the hospital administration. While it may be possible in some institutions, under a salary arrangement, for the radiologist directing the department to build and maintain an outstanding department with entirely adequate service, such is actually exceptional. The department will grow more rapidly in usefulness and competency if the radiological staff is permitted to practice as private practitioners instead of as salaried employees of the hospital.

"In no instance and under no arrangement is a hospital corporation entitled to any portion of the net profits earned by the radiological staff in the practice of its profession. Under percentage and salary arrangements it is difficult to adhere strictly to this principle. Nevertheless, it can be done, and the accounts of the department should be reviewed frequently by the hospital administrator and the radiologist in order that adjustments may be made to take care of fluctuating conditions that could result in a profit or a loss to the hospital corporation. Where a percentage or salary arrangement is in use, the accounts pertaining to the roentgen department should, of course, be open to members of the radiological staff at all times.

"By adopting a rental arrangement or by adhering to the principles outlined above, there should be assurance that adequate personnel, equipment, and supplies will be available in the roentgen department at all times. Professional personnel should be added to the department as rapidly as the income permits. In the case of large and busy hospital radiological departments it will obviously be necessary for several radiologists to be on duty or on call at all times in order that adequate service may be maintained.

"In the case of teaching institutions where the bulk of the work in the department is free of clinic work, the cost of the latter should be borne as is the cost of the free or clinic work in other departments. In the great majority of hospitals the clinic work amounts to less than 30 per cent of the total work of the department, and under these circumstances the radiologist or radiologists should contribute his or their professional services as do their colleagues. However, in the case of large teaching institutions, where the heads of departments are customarily paid an honorarium for supervising and conducting the teaching and routine clinic work of their departments, it is obvious that similar arrangements should be made with the radiologists.

"FEES

"The fees charged for radiological services shall be under the control of the radiologists and should be within the range for the locality. They shall be treated as are other medical fees; that is to say, varied according to the ability of the patient to pay. It is contrary to the ethics of the American Medical Association for physicians to issue fee schedules; it is equally unethical for a radiologist to permit a hospital to issue a fee schedule, even though he is not issuing it himself.

"The manual quotes from the Manual of Hospital Standardization of the American College of Surgeons:

'Fee splitting is transaction for financial gain practiced under contract, understanding, or by consent—silent or spoken—through which a portion of the compensating fee that a specialist or practitioner receives from a patient (presumably for his own services) is paid directly or indirectly to another individual or agent who was influential or instrumental in bringing the patient to the specialist or practitioner for operation or treatment. . . .

'. . . It is the duty of the hospital management to exercise continuous vigilance to prevent fee splitting under any guise. The institution which harbors fee splitting must share the guilt with the perpetrator of the crime, and the onus of guilt, when question arises, is also shared by the hospital. . . .

'From the standpoint of medical and nursing education, a fee splitting atmosphere in a hospital is detrimental to the proper cultural development of the intern, the medical student, and the student nurse inasmuch as they are in the formative years of their professional lives. While technical training is vitally important, it can count for nothing without a good background of ethics and respect for scientific medicine. Professional ethics and ideals of vocation cannot be implanted and developed in an environment which condones fee splitting.

'The evils of fee splitting are well known to the medical profession and to hospitals. They must realize that the best interest of the patient can be properly protected only when service rendered is ethical as well as efficient. In this respect the service must be entirely free from any element of commercialism. With the practice of fee splitting this is impossible, for too frequently the monetary aspect is more influential than the guiding forces of scientific medicine.'

"GROUP HOSPITALIZATION

"In this connection it is emphasized that medical services of any type must not be included as a part of hospitalization benefits. They may be included along with hospital benefits, provided that direct cash payments are made to beneficiaries of group hospitalization, said beneficiaries then to remunerate their radiologist for such services as he has provided. Radiologists shall not permit the inclusion of their services in any type of health, medical, or hospitalization insurance not approved by their local county medical society, and state and national medical organizations. Only in this manner can the health and welfare of the public at large as well as of the patients in that particular institution be adequately protected. The radiologist shall at all times cooperate with the governing board of the hospital in the development of all recognized plans tending to lower the cost of medical care and improve the quality of medical diagnosis and treatment.

"APPENDIX B

"Excerpt from 'Essentials of a Registered Hospital' by the Council on Medical Education and Hospitals of the American Medical Association:

'*General Statement.*—Hospitals should be organized and conducted primarily for the purpose of providing facilities where the sick and the injured of the community may be given scientific and ethical medical care.

'Registration is a basic distinction between all recognized hospitals and those that are refused recognition. It is a prerequisite to the consideration of a hospital for approval for interns or for residencies in specialties.

'The registration of hospitals, the approval of hospitals for interns, approval for residencies in specialties, and all other service of the Association regarding hospitals is carried on by the Council on Medical Education and Hospitals. Separate essentials have been adopted for each of these types of approval.

'It is the desire of the Council to cooperate in every way for the improvement of hospital service, whereby the sick and injured may be provided with scientific and ethical medical care.

'The Council does not have nor does it assume legal authority over any hospital. It recognizes clearly that the officers in charge of such institutions have the unquestioned right to conduct the hospitals in any way they may deem wise. If a hospital desires to have its name appear on the American Medical Association Hospital Register and thus have the endorsement of the Association, it should be willing to comply with the principles which the Council on Medical Education and Hospitals considers necessary. . . .

'*Radiology.*—1. The responsibility for all radiologic examinations must rest on the physician-roentgenologist who is head of the department. His findings and conclusions for all examinations should be placed in the patient's chart. Nothing in this provision should preclude additional study and interpretations by qualified attending physicians on the staff. 2. The physician-roentgenologist should be preferably one who is a diplomate of the American Board of Radiology or a physician whose qualifications are acceptable to the Council on Medical Education and Hospitals of the American Medical Association. 3. It shall not be the policy of the hospital to make a profit from the department of radiology.'

"APPENDIX C

"Principles of Financial Relations in the Professional Care of the Patient.

"Excerpt from the 'Manual of Hospital Standardization,' American College of Surgeons:

1. Each doctor who participates in the care of a patient is entitled to compensation from the patient commensurate with the services rendered.

2. Whenever practicable and possible the attending doctor should acquaint his patient with his financial responsibility to those concerned with his care.

3. Each doctor concerned in the care of a patient should give or send directly to the patient a detailed statement showing charges for professional services rendered.

4. Combined statements should be avoided, as they may constitute subterfuges for fee splitting.

5. Each doctor who participates in the care of the patient should send a personal receipt directly to the patient for all moneys received from the patient or other legitimate or authorized source.

6. In so far as possible, a third person should not enter into the financial relations between doctor and patient, and to this end hospitals should be discouraged from determining or collecting fees for doctors.

7. An exception to the foregoing principles must, of necessity, be made when there is a formally organized clinic or legal partnership which in effect may be regarded as an individual and which acts in that capacity. This principle should apply also when the clinic and hospital are combined and under the same ownership.

8. The practice of having the referring doctor act as assistant or anesthetist in an operation should be discouraged, unless he is competent for either or both of these duties by virtue of his training and continuous experience.

9. A surgeon who has a regular assistant at operations may pay him directly. When the assistant has referred the patient to the operating surgeon, he should follow the procedure outlined in paragraph 3."

The American Hospital Association sets up certain requirements in its Approval Program and Standards for Blue Cross Hospital Service Plans as follows: First, Adequate Representation of Hospitals, the Medical Profession and the General Public. Trustees or board members of the hospital service plan should receive no remuneration for service as trustees or board members. The interests and the responsibilities of participating hospitals make it necessary that a majority of the policy making body be hospital trustees and administrators. Trustees or Board Members of the Hospital Service Plan should receive no remuneration. Second, Nonprofit Sponsorship and Control are required. Third, Free Choice of Hospital and Physician suggests that all institutions of standing should be given choice of hospital and physician. Fourth, Hospital Responsibility for Service to Subscribers describes the economic responsibilities to subscribers. Fifth, Accounting Records defines accounting methods. Sixth, Adequate Statistical Records and Actuarial Data enumerates required statistical records. Seventh, Adequate Financial Support and Working Capital refers to working capital and financial statement. Eighth, Reapproval Based on Record of Community requires annual review for reapproval. Ninth, Equitable Payments to Hospitals refers to hospital costs and community economic needs. Tenth, Dignified Promotion and Administration requires dignified promotion recognizing professional ideals and sound practices. Eleventh, Hospitals and adjacent Blue Cross plans suggests definition of territory. Twelfth, Subscriber Benefits Based on Hospital

Practice reads as follows: "Hospital service provided through a hospital service plan should be determined by the practices of the member hospitals of the particular plan. Member Hospitals are urged to cooperate with Blue Cross plans in providing complete hospital care as service benefits under the subscribers' certificates. Thirteenth, Noninterference with Professional Relationships specifies "hospital service plans should not interfere with existing relationships between physicians and patients." Fourteenth, General Policies: "A hospital service plan should, in all respects, meet with the general approval of the Board of Trustees of the American Medical Association."

C. Rufus Rorem, Ph.D., director of the Commission on Hospital Service of the American Hospital Association, quotes the following as part of a statement issued on June 18, 1936 by the trustees of the American Hospital Association:

"Present practices of hospital organization have been developed in response to public need, and for many years fostered by the professional associations of this country, including the American College of Surgeons, the American Medical Association and the American Hospital Association.

"More than 10,000 physicians are now employed by hospitals on a full time or part time basis for the care of the sick or for laboratory services. Such financial relationships are particularly common in the laboratory and x-ray departments from which diagnostic services are requested by other physicians. The discontinuance of these relationships between hospitals and physicians would make it necessary for each patient to establish business relations with, and pay fees to, each physician contributing directly or indirectly to his care in the hospital.

"The primary obligation of the hospital is to provide and organize all the services necessary for the diagnosis, treatment and rehabilitation of the patient.

"Provision of medical services in hospitals is part of the responsibility of the hospital and is consistent with the rights, privileges and obligations of the hospital staff physicians under their medical licensure. The performance of diagnostic and therapeutic procedures by staff members constitutes the practice of medicine in hospitals; it is not the practice of medicine by hospitals."

The Bureau of Medical Economics of the American Medical Association in its report to the House of Delegates in 1933 stated "The medical profession is opposed to any plan that will destroy the basic features of medical service or will permit hospitals to enter the practice of medicine. If hospitals are permitted to include medical care in their contracts for hospital service, the precedent is set for institutionalized contract medical practice with all its destructive effects on the art and science of medicine."

At the same meeting the Judicial Council reported the following: "Whether the scheme (meaning the group hospitalization) is or is not financially or economically sound is not the problem of our organization, but it is our business to see that the furnishing of medical service is not included in the sale of insured hospital accommodations. This can be done if a strong stand is taken and maintained by the organized medical profession, which must keep a watchful eye to see that medical care is not initially or later included when the usual sales efforts demand increased benefits to purchasers. At the Atlantic City meeting of the House of Delegates in 1942 a resolution on Medical Service Plans, introduced by Dr. Charles E. Mongan, Massachusetts, carried the following: "*Resolved*, That the state and county units of the American Medical Association in undertaking medical service plans at the behest of the parent organization will have their hand supported if medical service contracts as well as cash indemnity contracts are given equally frank direct approval by the House of Delegates."

The reference committee recommended that the following resolution be adopted in substitution of the original resolution introduced by Dr. Mongan: "*Resolved*, That the House of Delegates of the American Medical Association approves that principle of medical service plans on a service basis when sponsored by a constituent state medical association or a component county medical society in accordance with the recommendations relative to medical service plans adopted by the House of Delegates."

There is a very close association between Blue Cross Hospital Plans and medical service plans in many places and it is reported that in some communities the hospital plans collect from subscribers to medical service plans sponsored by medical societies. The method of payment to physicians varies. The extent to which approval of some Blue Cross Hospital Plans by county medical societies as referred to in the resolution adopted by the House is equivalent to sponsorship of methods of providing medical service contrary to principles adopted by the House is subject to question. It must be recognized that many of the plans sponsored by component county or constituent state societies are based on legislation in which directing boards are made up of lay and professional members. In many instances the professional members are in the minority, and the interpretation of the authority and methods to which sponsorship was voted becomes still more confused. Without the examination of the legal background and organization structure in each of the local communities it would be impossible to judge the status of the individual plans from the basis of the principles set up by the House of Delegates.

The record of official actions, approved principles, published reports and manuals for guidance in formulating policies and plans were presented for the purpose of comparison and better appraisal of conditions now existing. Conferences were arranged by the Board of Trustees including the American Hospital Association, the Catholic Hospital Association, the Protestant Hospital Association and representatives of the Inter-Society Committee for Radiology and the American College of Radiology.

Existing relations between radiologists and hospitals were discussed. It was stated that about 9 per cent of the radiologists lease the department from the hospital on a fixed rental basis. Approximately 37 per cent of all radiologists are employed on a salary basis by the hospitals in which they work. The remaining 54 per cent share the gross receipts or net receipts with the hospitals. In some instances this is a combination of fixed salary and percentage. Therefore in about 9 per cent of contracts the radiologists employ or appoint and pay their own assistants. In almost all the other plans the hospitals employ the technicians. In the roughly 37 per cent of instances in which the radiologists operate the department on a percentage basis the hospitals employ and pay the technicians. In some instances the radiologists are given the responsibility of selecting and discharging their technical assistants, but the hospital pays the employees.

It was estimated by the representatives of the radiologists that not more than 19 per cent of the radiologists collect the fees of their own departments in hospitals. That estimate included the 9 per cent who operate the department as tenants. Therefore 10 per cent of those operating on a salary or commission or combination plans collect bills for their services. It is obvious that 90 per cent of the radiologists referred to are employed in some plan of contract practice.

In discussion of the medical ethics involved, it was noted that the Principles of Medical Ethics states that "contract practice, per se, is not unethical. However, certain factors or conditions if present make a contract unethical." The section continues with an enumeration of many factors which determine the ethical or unethical character of the relations. The concluding paragraph of section 3 reads "Each contract should be considered on its own merits and in the light of surrounding conditions. Judgment should not be obscured by immediate, temporary or local results. The decision as to its ethical or unethical nature must be based on the ultimate effect for good or ill on the people as a whole."

In a recent communication by the president of one of the larger hospital service plans it was stated that "the present hospital practices and traditions were evolved over the years through the cooperation of hospital administrators and their medical staffs long before the advent of the plan. The plan at no time since its inception has attempted to direct hospital practices. The sole function of the plan is to act merely as a medium whereby hospital services may be provided to the public on a budgetary basis. The hospital services are identical both for plan subscribers and for nonsubscribers.

"It is not possible for the plan to dictate hospital or medical practices. It would seem desirable that the formulation of

hospital and medical practices should remain the responsibility assumed by the medical profession and the hospital administrators. Would it not be in the best interest of the modern practice of medicine if medical problems arising in hospital practice could be carefully studied and solved through the cooperation of local hospital associations and the county medical societies?"

Continuing in part, it was stated "One of the basic and best features of the plan would be destroyed if the recommendations proffered by the Joint Council resolution were to be put into effect, if that is at all possible. If subscribers were required to pay professional fees for all x-ray, laboratory and anesthesia services rendered in the hospital, there would be but half a plan and probably no plan at all after a short period. If the plan were to pay for those services on an individual fee basis, this would prove unsatisfactory because of the varying rate schedules among our member hospitals and enormous difficulties of control.

"The main problem, it seems to me, is the lack of uniformity in hospital practices, to say nothing of the lack of uniform accounting.

"It may be possible to enumerate the individual charges for x-ray and laboratory examinations, etc., and to make this information available to the physician rendering such services. In any event, A. H. S. is always eager to extend to the medical profession the utmost cooperation in the solution of mutual problems."

Eleven million people are reported at this time to be subscribers to Blue Cross Hospital Plans. Of the seventy-seven plans to which this group are subscribers 50 per cent include as a part of the hospital service the service of doctors and 90 per cent of the hospitals are including radiology as a part of the hospital service.

Hospital representatives as well as the statements of those responsible for the policies of the Blue Cross plans call attention to the standards for approval and note that they are not so organized that they can control local groups or plans, that the local plans should follow local community practice and that even if a local group were refused approval in the Blue Cross plan it could still continue to operate.

However, it has been reported that a uniform national contract has been proposed by the Commission on Hospital Service of the American Hospital Association recommending to all Blue Cross plans the inclusion of complete pathologic service, anesthesia and radiology to the amount of $15. The manner in which this inclusion is to be financed merits discussion.

The public hospital should not use the hospital created monopoly control of radiologic service as a source of profit beyond the normal provision for replacement, department development and proper proportion of over-all costs of operation of the hospital. Nor can it rightfully use per diem charges against all of the hospital patients to support a radiologic department devoted to creating bargains in radiologic service in order to make hospital group insurance attractive. On the other hand, the radiologist should not use the hospital created monopoly in such manner as to effect for himself an unfair profit or to permit deterioration of equipment and service.

Hospitals or radiologists employing personnel may be responsible for impairment of standards of radiologic work and exploitation of the public by not providing sufficient medical attention to the patient and by delegation of too much responsibility to technicians in their efforts to care for a large volume of patients with the least expense in professional personnel.

The Council on Medical Education and Hospitals of the American Medical Association does not have the authority to police hospitals considered for intern training. It inspects them only as to educational standards and facilities. Although this Council must give attention also to unethical practices in the hospital, it is not in a position to rule on a question of such magnitude as the contractural relations of the radiologic departments in hospitals.

Hospital plans should be sold on their own merits. The statement that, because of their unpredictable costs, radiologic fees must be included to make the plans more attractive suggests that hospital plans cannot well be sold on their own merits. This is not borne out by experience in communities in which the Blue Cross Hospital Plans do not include services of radiologists.

Administrators of the large group hospitalization plans and administrators of hospitals operating under these plans are beginning to recognize the abuses that develop. One state with a medically sponsored plan has concluded to discontinue the laboratory features because of the demand for unnecessary radiologic service. Many insured patients take the attitude that in carrying the insurance they have acquired the right to demand every service that the plan provides whether the attending physician deems it necessary or not.

Another abuse that is increasing greatly is that of applying for hospitalization for treatment of some condition for which laboratory study and x-ray examination have been advised. The subscriber remains in the hospital only the number of hours necessary for these examinations and then leaves the hospital. Some plans have endeavored to prevent this abuse by stipulating in their contracts that hospital service benefits will not be extended in those instances in which subscribers are admitted primarily for diagnostic x-ray or laboratory examinations or other diagnostic studies. Despite efforts to enforce this provision so that subscribers do not receive benefits for procedures which do not require hospital bed care and which could be performed by a physician outside the hospital, the abuse is increasing and cannot be completely prevented. Only the most complete cooperation of the physicians and hospitals can save these plans from steadily increasing abuses.

Hospital boards and administrators need guidance and support in maintenance of medical standards, necessary discipline and regulation of hospital practice, and formulation of policies. A medical staff acting as a committee of the whole made up of specialists may not be interested in dealing with the multitude of problems of hospital operation or care to give time or thought to its policies. A smaller group, advisory committee, appointed by the board of trustees and acceptable to the staff is often needed. Very many hospitals have similar plans of organization and find them useful in meeting the multitude of problems accompanying the rapid evolution of hospitalization. Advisory committees can give valuable advice and guidance to lay boards and support to administrators and can assist the boards in presenting the problems of institutional operation to the medical staffs. In turn, these advisory groups may give more time and thought to medical practices in the hospital and assist in interpreting the medical thought of the staff to the administrators and boards. Such advisory committees can also be better informed and helpful in discussing hospital policies in conference with county medical societies.

This is not a detached matter but is only one portion of the broader subject of hospital-physician relationship. Hospitals are buildings and equipment with trained personnel and are useful only when their facilities are utilized by physicians for the treatment of patients. Physicians in turn cannot give medical service of high standard without the facilities provided by hospitals. Therefore they must continue to cooperate as in the past, unselfishly, in promoting the development of scientific methods and sound practices directed to better care of the sick without exploitation of each other or the patients they treat.

Each community has its own peculiar problems and the answers are necessarily influenced by geographic location, by educational factors, by economic limitations, by customs, community prejudices and influential personalities. These factors cannot be fairly evaluated by individuals at distant points who are not familiar with them. Patterns as outlined by general principles are national. Details are essentially local. The application of the code of ethics to local relationships and practices is a local responsibility.

Action of the House of Delegates at each meeting throughout a period of ten or more years, as reported, must be recognized as evidence that action of the House declaring certain conditions of practice unethical is not sufficient to correct them. Any remedy must depend on the acceptance of basic principles and their application to local problems by the whole medical profession of that community. It is noted that little reference has been made at any time to representation of the physician who is responsible for admission of the patient to the hospital although he requests the radiologic service and thus presumably

represents the patient to some extent in that transaction. Too often it is assumed that the hospital and the radiologist are the only ones interested.

Inasmuch as radiology must be a monopoly in the hospital, the position of the radiologist and the department of radiology is somewhat different than that of other specialties, such as surgery and medicine. The standards and conduct of that monopoly are, however, a matter of interest to all physicians who must depend on that department in making decisions of the utmost importance to their patients and themselves.

Many hospital representatives have indicated that they may change their group hospitalization plans and place the radiologist on the same plane as any other physician, making a definite charge for use of equipment and technical service. Necessary supervision of technical service is to be provided by the radiologist on a salary basis. Consultant service is to be charged to the patient by the radiologist and preferably be collected by him. Some hospital representatives state they prefer not to have radiologic charges appear in the popular mind as costs of hospital care.

It is the considered judgment of some good observers that great expansion of the activities of hospitals into the practice of medicine by increased employment of medical personnel would inevitably lead to necessary legal restrictions and other changes. These changes would be of such character as to destroy eventually the present status of hospitals as independent agencies providing high standards of facilities for care of the sick.

In considering the present status of the radiologist it is evident that he cannot occupy the triple position of an employee of the hospital, a partner participating in the profits of the department through sharing its receipts, and still retain the position of an independent contractor with the patient, such as pertains in the accepted patient-physician relationship. The situation becomes more involved when the hospital partner sells its services and his to the public through another agency—group hospitalization. Loss of his professional identity to the public makes his future dependent entirely on his employer. This statement cannot be construed as in opposition to group hospitalization to which medical approval has been given repeatedly. However, the Board of Trustees has been requested to make efforts to clarify the relationship of radiologists, anesthetists, pathologists and others with hospitals. The relations differ somewhat in each group. Radiologists and hospitals have been discussed here. Other studies may follow.

In 1937 the House of Delegates approved the following principle: "The subscriber's contract should exclude all medical services; contract provision should be limited exclusively to hospital facilities." Certainly this statement is clear and, until changed by the House of Delegates, represents the policy of the American Medical Association. An unselfish and realistic approach to the problem by all concerned would do much to hasten a not impossible solution of the problems under discussion.

Report of Judicial Council

Dr. George Edward Follansbee, Chairman, presented the following report, which was referred to the Reference Committee on Amendments to the Constitution and By-Laws:

To the Members of the House of Delegates of the American Medical Association:

The activities of the Judicial Council during the past two or three years have been confined largely to acting on applications for Fellowship and to the consideration of inquiries submitted by individuals or groups. There have been almost no appeals from disciplinary actions of constituent associations for the Council to adjudicate. This is quite different from the situation five to ten years ago, when component county medical societies and constituent state medical associations were sensitive to infractions of their by-laws and the Principles of Medical Ethics and were active in bringing offenders to account. During that period the Council was seldom without an appeal to be heard from a decision by a constituent association. The question naturally arises as to the causes underlying such a condition. Are our organized societies more actively governing the ethics of the practice of their membership or has the stress of the times resulted in indifference to our ethical principles?

It might be inferred from the number and the nature of problems which have come up for decision by the Council in the last two or three years with respect to Fellowship that in many instances a more or less complete disregard for the principles of ethics has been exhibited by individual members and that societies having original jurisdiction have failed to take proper action. The Constitution of the American Medical Association provides that the judicial power of the Association shall be vested in the Judicial Council and "shall extend to and include all questions involving Fellowship in the Scientific Assembly or the obligations, rights and privileges of Fellowship." The By-Laws provide that any member properly qualified by education and the payment of current annual Fellowship dues shall, on application, "be inducted into the Association as a Fellow unless the application is disapproved by the Judicial Council." The time of the Council at its meetings held in the interim between the annual meetings of the House of Delegates has been largely occupied in considering applicants for Fellowship about whom the biographic file of the Association contains some information which the Council feels must be satisfactorily explained before it can approve the application for Fellowship. The Council makes no "snap" judgments on these applications. The information appearing in the file is transmitted to the applicant, and he is asked to make any statement he desires to the Judicial Council, which is considering his application. When such statement is received, the matter is then fully investigated by correspondence, which often extends over a period of several months or even years. Frequently the applicant asks to be heard by the Council, which request is always granted. The persistence with which these applicants pursue their endeavors to become Fellows is the best evidence of the value that the profession in general places on Fellowship in good standing in the American Medical Association. Many such applications are disapproved. It also may be said, in passing, that reference to the constituent state or component county medical society where the applicant resides and practices in many instances fails to obtain any information or, in some instances, even a reply!

In these times of war with regulation of living, working, traveling, eating, spending, saving and almost everything except thinking, it is probably inevitable that the moral tone of the whole world has suffered to a greater or lesser degree. It could hardly be otherwise when we consider that the brutality of the present most destructive war of lives and property is in progress. The medical profession is less involved in this destruction than is the great percentage of the people of the world. This we should expect whether in peacetime or wartime.

We know that from the time of Hippocrates, the "Father of Medicine," the practice of the healing art has had ethical ideals and obligations higher than any other occupation or profession. It has always, since that time, been the duty of the physician to make the welfare of his patient his first consideration. That is the basic principle in our Principles of Medical Ethics. Every member of our organization is in duty, and by his own consent, bound by them, and those of our profession who are not members of our organization accept them as their guide to right action.

Very probably the maelstrom in which we are all living is confusing our morals; this also may explain the condition which the Council believes to exist, but it does not excuse it. It must always be remembered that the medical profession has gained and maintained its present position of high favor in public opinion through the exercise of these principles of right action through hundreds of years of growth since Hippocrates wrote his famous oath. Let us not, as individuals or as an organization, by either wilfulness, carelessness or indifference jeopardize the fair reputation our profession has built.

Respectfully submitted,

GEORGE EDWARD FOLLANSBEE, Chairman.
JOHN H. O'SHEA.
EDWARD R. CUNNIFFE.
WALTER F. DONALDSON.
LLOYD NOLAND.

Report of Council on Medical Education and Hospitals

Dr. Charles Gordon Heyd, Acting Chairman, presented the report of the Council on Medical Education and Hospitals as presented in the Handbook, together with the following supplementary report, all of which was referred to the Reference Committee on Medical Education:

SUPPLEMENTARY REPORT OF COUNCIL ON MEDICAL EDUCATION AND HOSPITALS ON ESSENTIALS OF ACCEPTABLE SCHOOLS

The Council on Medical Education and Hospitals presents herewith for ratification by the House of Delegates the following Essentials:

1. Essentials of an Acceptable School for Clinical Laboratory Technicians. The only change that was made was in the first sentence in the second paragraph under the heading III "Faculty."

2. Essentials of an Acceptable School for Physical Therapy Technicians. These essentials have been completely revised.

3. Essentials of an Acceptable School of Occupational Therapy. These essentials have been completely revised.

4. Essentials of an Acceptable School for Medical Record Librarians. In June 1942 a resolution was introduced to the House of Delegates requesting that the American Medical Association inspect and approve or disapprove present and future schools for the training of medical record librarians. This matter was referred to the Board of Trustees, which subsequently voted that the Council on Medical Education and Hospitals be asked to supervise the inspection of such schools. In accordance with this request, the Council has now completed a survey of ten medical record librarian schools and has prepared "Essentials of an Acceptable School for Medical Record Librarians" which are submitted herewith for ratification by the House of Delegates.

Respectfully submitted,

RAY LYMAN WILBUR, Chairman.
RUSSELL L. HADEN.
CHARLES GORDON HEYD.
J. H. MUSSER.
HARVEY B. STONE.
REGINALD FITZ.
H. G. WEISKOTTEN, Secretary.

1. ESSENTIALS OF AN ACCEPTABLE SCHOOL FOR CLINICAL LABORATORY TECHNICIANS

PREPARED BY THE COUNCIL ON MEDICAL EDUCATION AND HOSPITALS OF THE AMERICAN MEDICAL ASSOCIATION WITH THE COOPERATION OF THE AMERICAN SOCIETY OF CLINICAL PATHOLOGISTS

PREAMBLE

Two organizations are primarily concerned with the training of clinical laboratory technicians: the Council on Medical Education and Hospitals of the American Medical Association and the Board of Registry of Medical Technologists of the American Society of Clinical Pathologists. The Council functions by inspecting, reporting and approving these schools, while the Board of Registry investigates and certifies the competency of the technicians.

The Council, with the cooperation of the Board of Registry, has promulgated standards for this type of training for the information of physicians, hospitals, prospective students and others and for the protection of the public.

Technicians are being trained in these schools to work under the direction of qualified physicians and not as independent practitioners of laboratory work.

I. ADMINISTRATION

1. Acceptable schools for training laboratory technicians may be conducted by approved medical schools,[1] by general hospitals, or by state health laboratories affiliated with hospitals, where the majority of the student's practical training is received. This arrangement should not discourage affiliations between the hospital and universities, colleges, public health laboratories or other hospitals.

2. All training of technicians shall be under competent medical control.

3. Resources for continued operation of the school should be insured through regular budgets, gifts or endowments, but not entirely through students' fees. Experience has shown that commercial schools operated for profit frequently do not adhere to proper ethical and educational standards and therefore are not acceptable.

II. ORGANIZATION

1. Adequate space, light and modern equipment should be provided in the laboratory department. A library containing up-to-date references, texts and scientific periodicals pertaining to clinical laboratory work and pathology should be maintained, or be readily accessible to the institution.

2. Satisfactory record systems should be provided for all work carried on in the department. Monthly and annual classifications of the work of the department should be prepared.

3. Transcripts of high school and college credits and other credentials must be available. Records should be kept of each student's attendance and grades as well as the number and type of tests performed. In addition a synopsis of the complete curriculum should be on file in the office of the laboratory director. This curriculum should include the rotation of assignments, the outline of instruction supplied by the laboratory and a list of the prepared specimens which are used to augment the experiences of the student.

4. At least two or more students should be enrolled in each class. Approval is automatically withdrawn if a school does not have any students for a period of two years, unless a satisfactory reason for this is given.

III. FACULTY

1. The school should have a competent teaching staff. The director must be a graduate in medicine who holds the certificate of the American Board of Pathology or who has had the equivalent in training and experience. He shall take part in and be responsible for the actual conduct of the training course. He shall be in daily attendance for sufficient time to supervise properly the laboratory work and teaching.

2. In laboratory practice the enrolment should not exceed two students to each member of the teaching staff. The staff should include not less than one salaried instructor who is a registered technician or eligible for registration, in addition to the laboratory director. In order to be considered as an instructor, a technician must have had three years of experience while members of the hospital staff or visiting instructors must have regular assignments that cover a complete course prescribed in the Essentials.

IV. PREREQUISITES FOR ADMISSION

Candidates for admission should be able to satisfy one of the following requirements:

(*a*) Two years of college work, including chemistry and biology from an accredited college or university.
After Jan. 1, 1943, this requirement shall read: Two years of college work, including general chemistry, quantitative chemistry and biology from an accredited college or university. Bacteriology may be substituted for biology. Organic chemistry and physics are highly recommended.

(*b*) Graduation from a school of nursing recognized by the state board of nurse examiners, and in addition college chemistry.
After Jan. 1, 1943, requirements for nurses shall include one year of college work—30 semester hours (45 quarter hours)—including courses in chemistry and biology.

V. CURRICULUM

1. The course of training should be not less than twelve months in duration and should include the following subjects: biochemistry, hematology, bacteriology, parasitology, histology, and serology. The training should also include a course in record keeping.

2. The instruction should follow a planned outline similar to the Model Curriculum of the Board of Registry of Medical Technologists and should be accomplished by text assignments; lectures or informal discussions; demonstrations; supervised practice; quizzes, and written, oral and practical examinations.

1. Ratified by House of Delegates in June 1942.

VI. Clinical Material

Each student should receive practice training, adequate in kind and amount, under competent supervision, in a hospital laboratory. The hospital should be registered and be otherwise acceptable to the Council on Medical Education and Hospitals of the American Medical Association and have a minimum of 2,000 yearly admissions. A sufficient amount of clinical material should be available to permit the student to comply with the requirements of the Board of Registry. If the hospital is not able to supply all of this material through its routine tests and examinations, artificial mediums should be provided.

VII. Ethics

1. Exorbitant fees and commercial advertising should be considered unethical.

2. Schools conducted primarily for the purpose of substituting students for paid technicians will not be considered for approval.

2. REVISION OF ESSENTIALS OF AN ACCEPTABLE SCHOOL FOR PHYSICAL THERAPY TECHNICIANS, PREPARED BY THE COUNCIL ON MEDICAL EDUCATION AND HOSPITALS OF THE AMERICAN MEDICAL ASSOCIATION

I. Organization

1. Acceptable schools for training physical therapy technicians should be conducted by accredited universities, medical schools, colleges or hospitals.

2. The Council has promulgated standards for this type of training to supply physicians, hospitals and prospective students with reliable information and for the protection of the public.

3. Responsibility for schools in hospitals should be placed on the hospital administration rather than the director of the department. In colleges and universities this responsibility is on the controlling board as for other schools or departments.

4. Resources for continued operation of the school should be insured through regular budgets, gifts or endowments; but not entirely through students' tuition fees. Experience has shown that commercial schools operated for profit frequently do not adhere to proper ethical and educational standards and are not acceptable.

5. There must be available records of high school, college work and other credentials of students. Attendance and grades of students together with a detailed analysis of their clinical experience shall be carefully recorded, by means of which an exact knowledge may be obtained regarding each student's work.

6. At least four students should be enrolled in each class. One or more classes may be enrolled each year.

II. Faculty

7. The school should have a competent teaching staff. Appointments should be based on thorough education, training and experience. The course of instruction shall be under the direction of a graduate in medicine who is qualified in the field of physical therapy. The staff should include not less than one qualified salaried instructor and in each institution where clinical practice is carried on not less than one qualified physical therapy technician for each six students. The question of full time and part time appointments is not as important as the qualifications of the instructors, who should be specialists or exceptionally well trained and well qualified in the lines they are teaching.

III. Facilities

8. Provision should be made for each student to receive clinical practice adequate in kind and amount under the supervision of a physician qualified in physical therapy in a hospital or other institution acceptable to the Council on Medical Education and Hospitals of the American Medical Association.

9. Adequate equipment should include anatomic charts, models and other aids to effective teaching. It is suggested that the student dissect at least a lateral half of the human cadaver or have the benefit of demonstrations of such dissections, supplemented by the use of the skeleton and disarticulated bones.

10. A library of adequate space and availability and containing up to date references, textbooks and scientific periodicals pertaining to physical therapy should be maintained.

IV. Administration

11. There should be careful and intelligent supervision of the entire school by an executive officer who, by training and experience, is fitted to interpret the prevailing standards in physical therapy education, with sufficient authority to carry them into effect.

12. The admission of students to the physical therapy school must be in the hands of a responsible committee or examiner, whose records shall always be open for inspection. Documentary evidence of the student's preliminary education should be obtained and kept on file. When the physical therapy school is an integral part of the university, this work usually devolves on the university examiner.

V. Requirements for Admission

13. Candidates for admission should be able to satisfy one of the following requirements:

(*a*) Graduation from an accredited school of nursing.
(*b*) Graduation from an accredited school of physical education.
(*c*) Two years of approved college training including satisfactory courses in biology and other sciences.

Courses in general physics and chemistry, as well as biology, are highly recommended for all who seek to enter training in physical therapy.

14. Advanced standing may be granted to students for work done in other acceptable physical therapy schools or hospital departments, provided the entrance requirements and other essentials herein set forth have been met. Official verification of the student's previous physical therapy work should be obtained by direct correspondence with the schools previously attended, and his preliminary qualifications should also be verified and recorded in a similar manner as for the first year students.

15. Health.—All applicants should be required to submit a physical health report including evidence of successful vaccination. All students should be given a medical examination under the supervision of the official school physician as soon as practicable after admission and this examination should include a roentgen examination of the chest.

VI. Publications

16. The school should issue, at least annually, a bulletin setting forth its organization, resources, entrance requirements, tuition fees, clinical facilities, affiliated hospitals, a detailed description of the courses, and the names of the members of the faculty with their respective qualifications.

VII. Minimum Curriculum

1. Length of Course.—The minimum length of full time training for the course should be thirty-six weeks.

2. Distribution of Time:

Subject	Clock Hours: Theory	Clock Hours: Practice	Qualifications of Instructors
a. Applied Sciences			
Anatomy	210*		M.D. or other instructor qualified in specialty
Pathology	30	..	
Physiology	30	45	
Psychology	15	..	
Physics	Correlated with other subjects		
b. Procedures			
Electrotherapy	25	40	Qualified technician
Radiation therapy**	5	5	
Hydrotherapy	5	15	
Massage	10	45	
Therapeutic exercise	30	75	
c. Physical Therapy as Applied to:			
Medicine	15	30	M.D. for theory; Qualified technician for practice
Neurology	10	15	
Orthopedics	15	30	
Surgery	15	30	
d. Ethics and Administration	5	..	Qualified technician
e. Electives	50*		Qualified technician
f. Clinical Practice	400*		M.D. and qualified technician
Totals	210	660 330	
	1,200 hours		

* Theory and Practice.

** X-ray and Radium Therapy not included in course for physical therapy technicians.

Suggested electives: asepsis, bandaging, first aid, history of physical therapy, hygiene, joint measurements, journal club, public health, office routine, occupational therapy, records, social service.

3. ESSENTIALS OF AN ACCEPTABLE SCHOOL OF OCCUPATIONAL THERAPY. PREPARED BY THE COUNCIL ON MEDICAL EDUCATION AND HOSPITALS OF THE AMERICAN MEDICAL ASSOCIATION

PREAMBLE

Two organizations are primarily concerned with the training of occupational therapists: the Council on Medical Education and Hospitals of the American Medical Association and the American Occupational Therapy Association. The Council establishes standards, inspects and approves schools and publishes lists of acceptable schools. The American Occupational Therapy Association is concerned with the promotion of educational activities and the registration of qualified therapists.

The Council, in cooperation with the American Occupational Therapy Association, has established standards for this type of training for the information of physicians, hospitals, schools, prospective students and others, and for the protection of the public.

Therapists are being trained in these schools to work under the direction of qualified physicians and not as independent practitioners of occupational therapy.

I. ORGANIZATION

1. A school of occupational therapy should be incorporated under the laws regulating nonprofit organizations. The control should be vested in a board of trustees composed of public spirited individuals having no financial interest in the operation of the school. The trustees should serve for reasonably long and overlapping terms. If the choice of trustees is vested in any other body than the board itself, this fact should be clearly stated. Officers and faculty of the school should be appointed by the board.

2. Affiliation with a college, university or medical school is highly desirable but is not an absolute requirement. When such an affiliation exists, an advisory committee should be established including representatives from the school and from the departments of the college, university or medical school which participate or cooperate in the teaching of occupational therapy.

3. Hospitals are required for clinical practice but should not attempt to operate a school of occupational therapy independently.

II. RESOURCES

Experience has shown that an adequate school of occupational therapy cannot be maintained solely by the income from students' fees. No occupational therapy school, therefore, should expect to secure approval which does not have a substantial additional income.

III. FACULTY

The school should have a competent teaching staff, graded and organized by departments. The staff should include, among its regular salaried instructors, an administrator or coordinator of the course who should be a registered occupational therapist or eligible for registration preferably employed on a full time basis. In addition to professional training, it is desirable that the administrator should possess an academic degree.

IV. PLANT

1. The physical plant should provide adequate lecture rooms, class laboratories and administration offices. Equipment should be adequate for efficient teaching in the various departments.

2. A library of adequate space and availability and containing standard texts and leading periodicals in occupational therapy should be provided.

V. ADMINISTRATION

1. Supervision.—There should be careful and intelligent supervision of the entire school by a director or administrator with sufficient authority to maintain the established standards.

2. Records.—There should be systematic records showing credentials, attendance and grades of the students.

3. Credentials.—The admission of students to occupational therapy schools should be in the hands of a responsible committee or examiner. Documentary evidence of the student's preliminary education should be obtained and kept on file.

4. Advanced Standing.—At the discretion of the administration, advanced standing may be granted for work (or experience) required in the occupational therapy curriculum which has been done in other accredited institutions. Official verification of previous work (or experience) should be obtained by direct correspondence. Preliminary qualifications should also be verified and recorded.

5. Number of Students.—The number of students admitted to the training course should be limited by the facilities of the school. In practical work of a laboratory nature the number of students that can be adequately supervised by a single instructor is, in general experience, about fifteen; in lectures the number may be larger. A close personal contact between students and members of the teaching staff is essential.

6. Discipline.—Each training school reserves the right to drop a student at any time for any cause which the school authorities deem sufficient.

7. Publications.—The school should issue, at least biennially, a bulletin setting forth the character of the work which it offers. Such an announcement should contain a list of the members of the faculty with their respective qualifications.

VI. PREREQUISITES FOR ADMISSION

1. Education.—Colleges offering training courses in occupational therapy which are combined with work leading to a bachelor's degree should require the candidates for this combined course to comply with the regular entrance requirements of the school concerned. Other candidates should furnish proof of having completed one year of college education or its equivalent.

2. Character.—All candidates should be required to present evidence of good character, general fitness, and emotional stability.

3. Health.—All applicants should be required to submit a physical health report including evidence of successful vaccination. All students should be given a medical examination under the supervision of the official school physician as soon as practicable after admission and this examination should include a roentgen examination of the chest.

VII. CURRICULUM

1. Length of Course.—The minimum length of full time training for the course should be one hundred weeks. The course should include not less than sixty-four weeks of theoretical and technical instruction and not less than thirty-six weeks of hospital practice training as set forth in succeeding sections.

2. Distribution of Time.—The period devoted to theoretical and technical training should include not less than sixty semester hours, of which not less than thirty semester hours should consist of didactic instruction and not less than thirty hours of technical instruction in therapeutic activities.

The curriculum should be so arranged that students placed in hospitals for practical training before the completion of their theoretical and technical instruction should have covered those portions of the curriculum which pertain to the clinical fields to which they may be assigned for practical instruction.

(*a*) Theoretical: The hours devoted to theoretical training should be still further subdivided as follows:

Required Subjects	Semester Hours
(1) Biologic Sciences to include: Anatomy, Kinesiology, Neurology, Physiology, Psychiatry, Psychology	15
(2) Social Sciences to include: Sociology, Individual Readjustment, Social and Educational Agencies	4
(3) Theory of Occupational Therapy to include: Interpretative courses covering the principles and practice of occupational therapy in relation to orthopedics, pediatrics, tuberculosis, psychiatry, general medicine and surgery and other special fields	4
(4) Clinical Subjects to include: Blindness and Deafness, Cardiac Diseases, Communicable Diseases, General Medical and Surgical Conditions, Orthopedics, Tuberculosis	4
(5) Electives	3
Total	30

(*b*) Technical: Because of the increasing demands of the medical profession for qualified therapists trained in special fields applicable to the education and training of disabled persons as well as to the treatment of the sick, there should be a certain amount of flexibility in technical requirements.

A minimum of 30 semester hours should be devoted to technical training. The major portion of these thirty semester hours may be in one of the following fields, with survey courses in the other fields:

(1) Arts—Fine and Applied: Design, Leather, Metal, Plastics, Textiles, and Wood
(2) Education—Special and Adult, Home Economics, and Library Science
(3) Recreation: Music, Dramatics, Social Activities, Gardening, and Physical Education

(*c*) Clinical Training: The time devoted to clinical training should be not less than thirty-six weeks in the following types of hospitals:

Mental hospitals	Not less than eight weeks
Tuberculosis sanatoriums or services	Not less than four weeks
General hospitals	Not less than four weeks
Children's hospitals or services	Not less than four weeks
Orthopedic hospitals or services	Not less than four weeks

The remaining twelve weeks optional

VIII. Hospital Affiliations

1. Hospitals or institutions affiliating for clinical training should be carefully selected by the board of directors of the school concerned and be acceptable to the Council on Medical Education and Hospitals and should not be considered eligible for training of students unless the director of the occupational therapy department is a competent occupational therapist qualified to supervise students.

2. The occupational therapy director of each training department should be considered a member of the training school staff.

3. A well defined program of lectures, clinics or staff meetings should be offered by the hospital to all students in occupational therapy affiliating with the hospital. This should be supplementary to the required theoretical and technical courses given in the school.

4. Written records and case studies must be submitted by each student. Students must obtain satisfactory rating in clinical training before a diploma is granted.

5. The occupational therapy director should maintain records especially covering the student's personal adjustment and general ability. Copies of these records should be sent to the school at frequent intervals and all reports filed in the individual student's record at the school.

Method of Application

Application for approval of occupational therapy schools should be submitted to the Council on Medical Education and Hospitals of the American Medical Association, 535 North Dearborn Street, Chicago. Inquiries regarding the registration of qualified therapists should be addressed to the American Occupational Therapy Association, 175 Fifth Avenue, New York.

4. ESSENTIALS OF AN ACCEPTABLE SCHOOL FOR MEDICAL RECORD LIBRARIANS

Preamble

There are two organizations primarily concerned with the training of medical record librarians. These are the Council on Medical Education and Hospitals of the American Medical Association and the American Association of Medical Record Librarians. The Council establishes standards, inspects and approves schools and publishes a list of acceptable schools. The American Association of Medical Record Librarians is concerned with the promotion of educational activities and the registration of qualified librarians.

The Council with the cooperation of the American Association of Medical Record Librarians has established the following standards for the information of schools, hospitals, prospective students, physicians, educational directors and for the protection of the public.

I. Administration

1. Acceptable schools for the training of medical record librarians may be conducted by general hospitals having adequate teaching material and personnel which will be described in succeeding sections. Approval may also be extended to colleges, universities and medical schools having suitable hospital facilities.

2. Resources for the continued operation of acceptable schools should be available through regular budgets, gifts or endowments but may be obtained in part through students' fees. Schools charging exorbitant fees or indulging in commercial advertising are considered unacceptable.

3. Training in the handling of records should be under the direction of a qualified medical record librarian.

4. Schools conducted primarily for the purpose of substituting students for paid librarians will not be considered for approval.

II. Organization

1. Adequate space, light and equipment should be available for the general and educational activities of the hospital departments used in the training of medical record librarians. A library containing current references, textbooks and periodicals pertaining to the work of medical record librarians should be readily accessible to the students.

2. The medical record library should maintain serial and alphabetic files of patients' records; statistical data on births, deaths and autopsies; diagnostic and operative classifications, and physicians' index. A modern system of classification should be employed with supplemental classifications and files for teaching and demonstration purposes. Such files should include serial and unit number systems, phonetic classifications, Standard Nomenclature of Disease, Standard Nomenclature of Operations and other acceptable classifications.

3. A record of the curriculum, teaching plans and a procedure book should be available. Records of the students' prerequisite training should be filed in the department. To these should be added the details of attendance and grades as well as a list of the experiences obtained by individual students.

4. A minimum of two students should be in training. However, the maximum number admitted for practical instruction should be determined by the amount of available space, teaching material and properly qualified instructors.

III. Faculty

1. A competent teaching staff should be supplied by the school. It's director shall be responsible for the actual conduct of the training course and shall devote sufficient time for proper supervision of the students. An adequate number of instructors should be available so that students may have immediate guidance and supervision in all of their assignments.

IV. Prerequisites for Admission

Candidates for admission should be proficient in typing and shorthand and in addition should fulfil one of the following requirements:

(*a*) Completion of two academic years of study in a college of liberal arts approved by a recognized accrediting agency.

(*b*) Graduation from a school of nursing recognized by a state board of nurse examiners.

V. Curriculum

1. The course of training should include not less than thirty-six weeks of practical hospital experience.

2. Theoretical instruction may be presented by informal conferences or formal lectures and should include the following:

Anatomy and physiology	60 clock hrs.
Medical terminology	25 clock hrs.
Hospital and medical ethics	20 clock hrs.
Fundamental principles and practices of medical record library science	50 clock hrs.

3. Practical training should involve all activities associated with the care of medical records. This should include the filing of records, the mechanism of admission and discharge of patients, the methods of cataloguing, medical dictation, observation of clinical procedures and dictation, and outpatient department records. Sufficient time should be devoted to each

assignment so that students may become familiar with all functions of the medical record library. Additional experience in the handling of records in the pathology and radiology departments is recommended. To augment the training program field trips should be arranged when possible to visit other hospitals and study their record library equipment and methods.

VI. Clinical Material

1. In order to be eligible for acceptance the general hospital where training is obtained should be registered and otherwise acceptable to the Council on Medical Education and Hospitals and have a minimum of six thousand annual admissions. These admissions should include an adequate distribution of patients in the various clinical services commonly found in general hospitals. If adequate facilities are not available, affiliations may be established with other hospitals to supplement clinical record instruction in such special fields as mental diseases, tuberculosis and outpatient service.

VII. Admission to the Approved List

1. Application for approval of a school for medical record librarians should be made to the Council on Medical Education and Hospitals of the American Medical Association, 535 North Dearborn Street, Chicago, Ill. Forms will be supplied for this purpose on request. They should be completed by the administrator of the institution requesting this approval.

2. Approval may be withdrawn whenever in the opinion of the Council a school does not maintain an educational service in accordance with the above standards. Whenever a training program has not been in operation for a period of two consecutive years, approval may also be withdrawn.

Report of Council on Scientific Assembly

Dr. A. A. Walker, Chairman, presented the report of the Council on Scientific Assembly as printed in the Handbook, which was referred to the Reference Committee on Sections and Section Work.

Report of Committee on War Participation

Dr. Walter F. Donaldson, Chairman, presented the following report, which was referred to the Reference Committee on War Participation:

To the Members of the 1943 House of Delegates, American Medical Association:

The War Participation Committee of the American Medical Association originated from the report of the 1941-1942 Committee on Medical Preparedness to the 1942 House of Delegates of the American Medical Association. The latter committee suggested that it be discontinued and a new committee created for the purpose of keeping in close touch with all war related policies affecting the quality and efficiency of medical service both to the armed forces and to the civilian population.

The accomplishments of the American Medical Association Committee on Medical Preparedness from June 1940 to June 1942 under the chairmanship of former President Irvin Abell will throughout the years reflect great credit on the entire Association as an outstanding voluntary contribution by the organized medical profession to the winning of World War II.

Paced by Dr. Abell's American Medical Association committee, the constituent medical associations served equally well their country's war needs through the instrumentality of similar committees as did hundreds of component county medical societies.

Since the summer of 1942, medical activities throughout the states and territories of the Union have been succeeded by the now familiar task of the Procurement and Assignment Service contributed usually by the same personnel which earlier served so well under Medical Preparedness.

The heavy responsibilities of the Procurement and Assignment Service as earlier known have become more complex, with doubled accent on the accessibility of adequate medical service to war industries, to thinly populated districts and to essential institutions. Since the Federal Manpower Commission has merged the Procurement and Assignment Service under the chairmanship of former President Frank H. Lahey, Dr. Lahey has twice turned to the American Medical Association War Participation Committee for cooperation. Similarly the Procurement and Assignment Service in the various states may turn to the State Medical Society War Participation Committee and doubtless the response will be prompt and understanding.

In our committee's communications the functions of the War Participation Committee of a constituent state medical association were recommended as follows:

> The proposed Committee on War Participation should keep in close touch with all policies affecting the quality and efficiency of medical service both to the armed forces and to the civilian population.
>
> It should feel free to express comments and criticism of policies relating to the participation of the medical profession in the war effort.
>
> Without authority to act, only to advise, it becomes a committee to express the views of the medical profession on such proposals as are made which may have a direct bearing on the Principles which the American Medical Association regards as fundamental in the provision of good medical care.

A War Participation Committee should at all times encourage and support to the fullest wise proposals to sustain the highest possible quality and efficiency of medical service both to the armed forces and to the civilian population, not failing at the same time to be looking to the situation in the years immediately following the determination of peace.

Obviously, a War Participation Committee may serve well at times by asking pertinent questions of all those in authority who during the war emergency (1) may seek disposal of precious medical service or (2) may be assigned control of medical education and training.

Avoiding impertinent and asking only pertinent questions will not in any way interfere with the winning of the war. Our own committee held its first meeting at the American Medical Association headquarters on Aug. 18, 1942 for the purpose of discussion with a subcommittee of the Procurement and Assignment Service headed by Dr. Clarence D. Selby of Detroit. The topic of Industrial Medicine sparked by the remarks of Commissioner Paul V. McNutt before the 1942 House of Delegates at its Atlantic City session led to the conference of August 18 which was participated in by representatives of the Board of Trustees of the American Medical Association, the Council on Medical Education and Hospitals and the Council on Industrial Health. At the conclusion of the discussion the Committee on War Participation requested the Association through its Council on Industrial Health to continue its pace making lead in connection with the profession's contribution to the winning of the war through its organizational and individualized efforts at "keeping war workers well." After this meeting our committee with the aid of Secretary Olin West made an effort to encourage the development of war participation committees in the various state associations for the purpose not only of stimulating the endeavors toward keeping war workers well but of cooperating with the Procurement and Assignment Service to meet the needs for medical care in all communities where shortage of physicians is demonstrable. It is a pleasure to be able to confirm published reports indicative of the great progress made in a considerable number of states in the spread of instruction in industrial medicine at county levels.

The second meeting of the War Participation Committee of the American Medical Association was held in Washington, D. C., with the directing board of the Procurement and Assignment Service for Physicians, Dentists and Veterinarians and with representatives of the United States Public Health Service on Dec. 14, 1942. Plans were presented whereby the United States Public Health Service could help to meet the need for medical services in so-called critical areas. At that conference the War Participation Committee of the American Medical Association recommended that state medical societies cooperate with the State Procurement and Assignment Service and with the state boards of registration and licensure in determining areas that lack medical services and in developing plans for medical services in such areas when the need arises.

A proposed statement of operating policy submitted by Surg. Gen. Thomas Parran of the United States Public Health Service was, after discussion and some alteration, unanimously adopted, and reads as follows:

> The Public Health Service and the Procurement and Assignment Service will jointly undertake studies of war industry and extracantonment areas from which shortages of medical and allied professional personnel are reported. These studies shall be made jointly by the appropriate corps area chairman of P. & A. state medical and dental chairman of P. & A. and representatives of U. S. P. H. S., either

the district director or some one detailed by the district director or by the Surgeon General. Also the state medical society and the state health department each will be invited to designate a representative to participate in such studies as will, where needed, the state dental society.

In a number of states the problem of supplying medical service in new war defense or war industry areas, or in rural areas denuded of medical service through the entry of practicing physicians into the armed forces, has, throughout much of the year 1943, been a serious one. Representatives of the U. S. Public Health Service have been helpful in the making of surveys confirmatory of localized needs for additional medical service, as submitted by the citizenry or by industries. Doubtless, in many instances, these needs will be filled by medical personnel recommended by the U. S. Public Health Service.

This type of cooperation has been consolidated in at least one state by the inclusion in act No. 45 of its 1943 legislature of a provision for the issuance of temporary permits to doctors of medicine legally licensed in other states to practice medicine and surgery under certain conditions for a limited period of time. We quote from said act:

> The provisions of this act are intended to supply medical services in communities where because of the drain of war needs on such services that are normally available there exists a need for medical services that may become a threat to public health. In order that this purpose shall be most effectively carried out the Board of Medical Education and Licensure in applying the provisions of this act shall cooperate with the Procurement and Assignment Service in Pennsylvania of the War Man Power Commission and with the committee on War Participation of the Medical Society of the State of Pennsylvania and shall give due consideration to the recommendation of either of such agencies.

A difficulty in the provision of adequate medical service in a number of critical areas seems to have arisen from the desire of other physicians in a given county that the physician newly locating in such an area will do so on a locum tenens rather than on a permanent basis, against the day of the return of the absent soldier-physician to his home practice.

The spirit of all home front doctors of medicine who thus condemn that which they may interpret as the selfishness which inspires a doctor to leave or to pass over a community which needs his professional services during this emergency, in order to relocate in a more promising community, is to be commended, provided in each instance full consideration with material results is first given to meeting the actual and existing health and sickness service needs of such a community.

Our committee is greatly indebted to the representatives of thirty-eight constituent state medical associations that responded to the committee's brief questionnaire addressed to them last April. From these replies it is evident that a large percentage have assigned the duties of their respective war participation committees to the preexisting committee on medical preparedness or Procurement and Assignment Service, without change of title or personnel. In some states, and in a larger proportion of counties, it is feared that the current War Participation Committee personnel, heavily engaged, possibly since 1940, in meeting the responsibilities of a committee earlier known as the Committee on War or on Medical Preparedness with its manifold duties, or later as the Committee on Procurement and Assignment Service equally heavily involved in specific duties, is likely to overlook some of the more generalized responsibilities of a War Participation Committee as defined by the 1942 House of Delegates of the American Medical Association.

Should we not be sure in each instance that the more definite duty of indicating which local or state physicians are believed to be "available" for service with the armed forces, or, on the contrary, are "essential" to home service, that a committee with combined duties may not be overlooking, for instance, the purely advisory duties of a War Participation Committee? Aside from direct war needs proposals are being made from time to time which have a direct bearing on the principles which the American Medical Association has for many years regarded as fundamental in the provision of good medical care to the 100 million people of this country who up to the present time are not directly employed in federal projects of combat, of farming or of industry, or in any other way specifically connected with the war effort.

Shall we not give consideration to definite organizational and individual responsibilities through War Participation Committees of nation, state and county directed toward helping the public to learn the truth about bureaucratic tax supported medical service in order that they may eventually eliminate its evils? This will require of each of us a rigorous knowledge of the truth and a considerable expenditure of effort. However, the necessity is so great, and the adverse consequences may prove so bitter for the people, even more than for the physician, that such leadership becomes our solemn duty.

Does it seem a far cry to discuss this particular duty while representing a War Participation Committee? The advisory function of such committees applies to the protection of adequate medical service for the civilian population and surely no federal commitment to regimented medicine should be made during the nation's war effort or while upward of fifty thousand of our younger colleagues are absent and serving with the colors.

Nominations for Affiliate Fellowship

The Secretary presented nominations for Affiliate Fellowship, which were referred to the Council on Scientific Assembly.

Visitors from Brazil

The Secretary announced the attendance of the following visitors from Brazil: Dr. Mario Kroeff of Rio de Janeiro, Dr. August W. Koenig of Rio de Janeiro, Dr. Nelson Guedes Muniz of Rio de Janeiro and Dr. A. L. Cancado and Dr. D. M. Cardozo, the first of Rio de Janeiro and the second of São Paulo.

NEW BUSINESS

Resolutions on Giving Intelligent Instruction in Science and Biology to the Youth of America

Dr. F. F. Borzell, Pennsylvania, presented the following resolutions, which were referred to the Reference Committee on Hygiene and Public Health:

During the last few decades the United States has witnessed the paradox of tremendously increasing knowledge and its applications in all fields of science along with steadily diminishing teaching of the principles and practices of science in our high schools. Many scientists and teachers of science have noted, written and spoken about this inconsistency.

The diminution in the teaching of sound biology in high schools to a near vanishing point in many schools is shown in data compiled in reports by a committee appointed for a survey by the Union of American Biological Societies.

Study of these data shows that the places of science in general and biology in particular have been taken by other subjects, many of which come under the head of "social studies." Most of the subject matter in these studies is of highly controversial nature. Both the yea and nay are equally derivable by emotional argumentation. There is no arbiter except "authority," notorious for its unreliability and changeability. Many of these subjects afford a false discipline for unformed minds in methods of study and learning for they present half truths, deceptive, elusive or entirely nonexistent statements and relations.

It is believed, therefore, that the organized medical profession of the country should adopt means of cooperating with the teachers of science, particularly biology, in endeavors to restore the teaching of science to its proper place in the high schools. With a sound background of biology the essential teaching of health topics will be on a sound basis and therefore more effective.

WHEREAS, The appropriate teaching of biology in the secondary school is essential to child's nutrition, his health and adaptability to changing environment; and

WHEREAS, The source of medical knowledge is logically the medical profession; therefore be it

Resolved, That the American Medical Association endorse the principle that every child in the United States be given four years of sound instruction in science with at least two years of biology in high school; and be it further

Resolved, That the American Medical Association through its Bureau of Health Education encourage close cooperation between the constituent state medical associations and the component county medical societies and the teachers of science in their respective communities to the end that intelligent instruction in science and biology be given the youth of America.

Resolution on Having Copies of the Boy and Girl Scouts' Manual in Physician's Waiting Rooms

Dr. James Q. Graves, Louisiana, presented the following resolution, which was referred to the Reference Committee on Miscellaneous Business:

WHEREAS, The House of Delegates of the Louisiana State Medical Society has adopted favorably a recommendation that members of the Louisiana State Medical Society have a copy of the boy and girl scouts' manual in their waiting rooms; therefore be it

Resolved, That the House of Delegates of the Louisiana State Medical Society respectfully have the Louisiana delegates request the House of Delegates of the American Medical Association to adopt a similar resolution in regard to members of the American Medical Association.

Resolutions Establishing a Committee on Medical Service

Dr. W. A. Coventry, Minnesota, in behalf of the delegates from the Minnesota State Medical Association, presented the following resolutions, which were referred to the Reference Committee on Legislation and Public Relations:

WHEREAS, The medical profession is conscious of its responsibilities in providing timely and adequate medical services to all of the American people, irrespective of race, creed or financial status; and

WHEREAS, It believes it to be its duty and right to make available scientific facts, data and medical opinion with respect thereto, and to make known the role that the science and art of medicine plays in the daily lives of all Americans; and

WHEREAS, The medical profession of the United States is ready to offer constructive leadership in the advancement of medical principles that will further medical service to all of the people and to preserve, not only the science and art of medicine, but the standards associated with the practice of medicine in America; now, therefore be it

Resolved, That there is hereby created by this House of Delegates a Committee on Medical Service which shall be composed of the following members:

1. The President of the American Medical Association, ex officio.
2. The Immediate Past President of the American Medical Association.
3. The Secretary of the American Medical Association, ex officio.
4. A member of the Board of Trustees of the American Medical Association, designated and selected by the Board of Trustees.
5. One member of the American Medical Association elected as hereinafter provided from each of the following nine geographic subdivisions of the United States:

New England: Maine, New Hampshire, Vermont, Massachusetts, Rhode Island and Connecticut; Middle Atlantic: New York, Pennsylvania, and New Jersey; East North Central: Ohio, Indiana, Illinois, Michigan and Wisconsin; South Atlantic: Delaware, Maryland, District of Columbia, Virginia, West Virginia, North Carolina, South Carolina, Georgia, Florida and Puerto Rico; East South Central: Kentucky, Tennessee, Alabama and Mississippi; West South Central: Arkansas, Louisiana, Oklahoma, Texas and Panama Canal Zone; West North Central: Minnesota, Iowa, Missouri, North Dakota, South Dakota, Nebraska and Kansas; Mountain: Montana, Idaho, Wyoming, Colorado, New Mexico, Arizona, Utah and Nevada, and Pacific: Washington, Oregon, California, Alaska, Hawaii, Philippines and Pacific Islands.

The members of this House of Delegates from each of the foregoing geographic subdivisions of the United States shall elect one member of the American Medical Association to serve on said committee; three of said nine members shall serve for one year, three shall serve for two years and three shall serve for three years; the respective terms of office of the nine members first elected shall be decided by lot and thereafter the said terms shall be for three years each. The expiration date for the first one year term shall be at the next ensuing annual session of the House of Delegates of the American Medical Association. Expiration dates for all terms shall coincide with the dates of the regular annual session of the House of Delegates of the American Medical Association; be it further

Resolved, That the duties of the Committee on Medical Service shall be:

1. The making available of scientific facts and data and medical opinion with respect to timely and adequate rendition of medical care to the American people.
2. To integrate the activities of the Committee on Medical Service with respective state and county committees on like activities.
3. Establish relationships and cooperation with other allied groups who are likewise engaged in the rendition of medical care, in its various branches, to the American people.
4. The Committee on Medical Service shall hold at least two meetings per year; one shall be held at the time and place of the annual meeting of this House of Delegates; the other meeting shall be held in the city of Washington, D. C., and called at the direction of the chairman; and such other meetings as may be necessary to be called by the chairman on the written request of the majority of the committee.
5. The committee shall forthwith and annually thereafter elect from its own membership a chairman and a vice chairman.
6. The Committee on Medical Service shall establish and maintain an office in Washington, D. C., and shall further be empowered and directed to employ a full time executive director, who shall act as secretary of the committee and whose duties shall be specified by the committee. Such executive director shall be a physician who has been actively engaged in the private practice of medicine for not less than five years during the previous ten years, and furthermore be informed and qualified to act as a liaison representative of said committee.
7. The Committee on Medical Service is further authorized to hire such legal and administrative help as is necessary; be it further

Resolved, That the Committee on Medical Service shall submit a budget for its expenses for the fiscal year to the Board of Trustees of the American Medical Association and it is the consensus of opinion of this House of Delegates that the Board of Trustees shall forthwith appropriate not less than 50 cents nor more than 1 dollar for each member of the American Medical Association so that adequate funds will be available for such committee to carry out its work on an honorable and ethical plane in keeping with the standards of American medicine; be it further

Resolved, That this committee shall submit an annual report to the House of Delegates at the annual session; and be it further

Resolved, That these resolutions on their adoption by the House of Delegates shall be forthwith transmitted to the Board of Trustees with the request that the Board of Trustees report back its action to the House of Delegates within twenty-four hours as provided for in the Constitution and By-Laws of the American Medical Association.

Resolutions Requesting the Establishment of a Council on Medical Care

Dr. E. H. Skinner, Section on Radiology, presented the following resolutions, which were referred to the Reference Committee on Amendments to the Constitution and By-Laws:

WHEREAS, The medical profession is conscious of its responsibilities in providing timely and adequate medical services to all of the American people, irrespective of race, creed or financial status; and

WHEREAS, It believes that its duty and right is to make available scientific facts, data and medical opinion with respect thereto and to make known the role that the science and art of medicine plays in the daily lives of all Americans; and

WHEREAS, The medical profession of the United States is ready to offer constructive leadership in the advancement of medical principles that will further medical service to all of the people and to preserve, not only the science and art of medicine, but also the standards associated with the practice of medicine in America; now therefore be it

Resolved, That section 3 of chapter VII of the By-Laws shall be and hereby is amended by adding thereto a new paragraph to be designated as paragraph (*d*), reading as follows: (*d*) Council on Medical Care; and be it further

Resolved, That chapter IX of the By-Laws shall be and hereby is amended by adding thereto a new section to be numbered section 4, reading as follows:

SEC. 4. COUNCIL ON MEDICAL CARE.—The functions of the Council on Medical Care shall be: (1) to take over all the functions and personnel of the Bureau of Medical Economics as now established; (2) to investigate all matters pertaining to the economic, social and public policy aspects of medical care for all citizens; (3) to suggest means and methods for the distribution of medical services to the public, consistent with the principles adopted heretofore and hereafter by the House of Delegates; (4) to execute other functions which may from time to time be delegated to such Council by the House of Delegates; (5) to develop, assist and coordinate committees on Medical Care and Public Policy originating within the state and county societies of the American Medical Association; (6) in cooperation with the Board of Trustees to establish and maintain a Bureau of Information on Medical Services at Washington, D. C.; and be it further

Resolved, That the membership shall be nine in number, elected as hereinafter provided from each of the following districts: New England: Maine, New Hampshire, Vermont, Massachusetts, Rhode Island and Connecticut; Middle Atlantic: New York, Pennsylvania and New Jersey; East North Central: Ohio, Indiana, Illinois, Michigan and Wisconsin; South Atlantic: Delaware, Maryland, District of Columbia, Virginia, West Virginia, North Carolina, South Carolina, Georgia, Florida and Puerto Rico; East South Central: Kentucky, Tennessee, Alabama and Mississippi; West South Central: Arkansas, Louisiana, Oklahoma, Texas and Isthmian Canal Zone; West North Central: Minnesota, Iowa, Missouri, North Dakota, South Dakota, Nebraska and Kansas; Mountain: Montana, Idaho, Wyoming, Colorado, New Mexico, Arizona, Utah and Nevada, and Pacific: Washington, Oregon, California, Alaska, Hawaii, Philippines and Pacific Islands.

The members of this House of Delegates from each of the foregoing geographic subdivisions of the United States shall elect one member of the American Medical Association to serve on said committee; three of said nine members shall serve for one year, three shall serve for two years and three shall serve for three years; the respective terms of office of the nine members first elected shall be decided by lot and thereafter the said terms shall be for three years each. The expiration date for the first one year term shall be at the next ensuing annual session of the House of Delegates of the American Medical Association. Expiration dates for all terms shall coincide with the dates of the regular annual session of the House of Delegates of the American Medical Association.

Resolutions Giving Public a Voice in House of Delegates and Establishing a Bureau of Medical Care

Dr. F. S. Crockett, Indiana, presented the following resolutions, which were referred to the Reference Committee on Legislation and Public Relations:

The Council of the Indiana State Medical Association directs its delegates to present the following communication to the House of Delegates of the American Medical Association, calling attention to the serious situation confronting the medical profession and suggesting remedies. Evidences of this situation not alone are found in Indiana but are manifest in nearly all sections of the country.

Throughout the rank and file of the profession there are many who feel that this House of Delegates has failed in large measure to reflect truly the wishes and thinking of the profession, nor have they been sparing in their comments in reference to the Trustees and other executives of this Association. Causes underlying this feeling are many. The past decade has witnessed a gradual encroachment of government in the field of medical practice which our leadership has been unable

to stem. Witness the loss of the Supreme Court decision, the report of the Pepper committee and the criticism of a powerful section of the press, to mention only a few.

In the minds of many who are not actively connected with the conduct of this Association we have been and are continuing to be defeated in our efforts to preserve our way of life. As these defeats continue, the demand for new leadership will increase. Reference is here made to an editorial appearing in the May issue of *Medical Annals of the District of Columbia,* which says in part "What the profession as a whole needs at this time above anything else is leadership which inspires confidence—able, constructive leadership. It needs the confidence which is inspired by *elected leaders* who can speak for them effectively without arousing unnecessary antagonisms. It needs in its national organization a quicker response to the heart beat of the doctors and the times. It needs the elimination of reactionary tendencies at the top."

In the past this House and the Board of Trustees have on occasion shown vision and leadership of a high order, such as its adoption of Principles for Medical Care in 1939 and the Military Preparedness program at the New York session. To meet the rising tide of public criticism, some way should be provided to give the public a voice in the deliberation of this House. That voice might be that of some individual of national standing whose wise counsel could share in molding the future of medicine in harmony with sound public policy. Whereas the Board of Trustees is an executive, not a policy making body, the interpretation of policy, which is a function of the board, is influenced profoundly by the liberal or conservative thinking of its members. This phenomenon has been observed repeatedly in the past whenever new members are elected. There are many duties of the Board which are solely the concern of the Association, but there are occasions when a voice reflecting the lay public mind in interpreting policy would be extremely valuable.

Some 40,000 of our most active members are temporarily in the armed forces. The hasty mobilization of such members has created many situations needing correction which the usual military channels seem inadequate to solve. These officers are members of this Association who expect to return to civilian practice. They properly look to us for sympathetic understanding.

It is proposed that a military morale unit be created by this Association with the consent and approval of the Office of the Surgeon General of each service. This unit should be headed by some nationally known physician who should have the confidence of the men in service and who could speak for the American Medical Association. He should have a staff of capable assistants, visit military medical establishments at home and abroad and be able to talk to any medical officer free from military restraint. All complaints should be analyzed carefully and placed before the appropriate authority with suggestions for correction.

The Bureau of Medical Economics has done a fine job. It should now be made the Bureau of Medical Care. It should include the ablest economist obtainable, who should be able to give the public, in their language, sound information on medical care problems. The problem of medical care requires attention now. The plan should be something that will enlist the active interest and participation of all citizens.

The plan endorsed by this House at San Francisco in 1938 proposed community action covering a wide variety of health activities, preventive and educational. It was a plan wherein each community would be encouraged to develop its own program suitable to the local needs. This plan, brought up to date to meet present conditions, can serve as a basis for a nationwide medical program.

The Bureau of Medical Care should establish a council or committee to rate communities according to their achievements in the preventive medical field just as the Council on Medical Education and Hospitals rates medical schools and hospitals for intern training. Communities outstanding in their preventive activities and results might receive some sort of award like the Army and Navy E's, given for excellence in production of military supplies. The ceremonies incident to giving these awards might be the background for a civic celebration that would make the public appreciate the splendid job being done by the profession under the aggressive leadership of this Association and the state medical societies in cooperation with the local profession.

Another important factor in improving our standing with our federal government would be the maintenance in Washington of an office for the convenience and information of Congress, manned by some one capable of representing the best in medicine. Proposed legislation affecting the interest of the medical profession directly and indirectly is being introduced into Congress with increasing frequency, and executive bureaus, commissions and other instrumentalities of the federal government issue rulings many of which may affect the practice of medicine.

In line with the facts and suggestions just enumerated we submit to this House of Delegates the following resolutions:

Resolved, That some provision be made whereby the lay public should have a voice in the deliberations of this House and in the Board of Trustees, wherever the public interest is involved;

Resolved, That a military morale unit be created with the consent and approval of the Office of the Surgeon General of each service, to visit military medical establishments at home and abroad to help in solving difficulties experienced by our members in service;

Resolved, That a Bureau of Medical Care be established to encourage communities in all the states to cooperate with their state and local medical societies in developing health movements covering the field of preventive, corrective and educational activities; and

Resolved, That the Bureau of Legal Medicine and Legislation be enlarged to enable the maintenance in Washington of some one capable of representing this Association who will be available at all times for the purpose of supplying information and developing better relations with Congress and other branches of our federal government.

Dr. A. A. Walker, Alabama, suggested that resolutions be read without preliminary speeches.

Recommendation Requesting Establishment of a Legislative Bureau of the American Medical Association in Washington

Dr. Wells P. Eagleton, New Jersey, presented the following recommendation, which was referred to the Reference Committee on Legislation and Public Relations:

With respect to the recommendation about to be introduced on behalf of the New Jersey delegation, we should mention that immediately following the annual meeting of the Medical Society of New Jersey held May 25 and 26, and pursuant to a resolution adopted at this meeting, a letter from the secretary of our society, containing the resolution regarding the establishment of a legislative bureau of the Association in Washington, together with a brief in support of this proposal, was sent to all of the listed Delegates of the Association, and since our arrival we have attempted to place in the hands of the other Delegates the material referred to.

We shall reserve further arguments in support of this proposal for the hearing before the reference committee, but we should like to emphasize that in making this recommendation it is not to be assumed that this in any wise is a reflection on the Bureau of Legal Medicine and Legislation. We believe from our experience and our relations with this Bureau that it is doing an excellent job within the setup now existing. The Legislative Committee of the Medical Society of New Jersey is particularly appreciative of the fine cooperation given by the Director of the Bureau, Mr. Holloway, in relation to some of our state problems, and has a high regard for his ability and judgment.

In referring this recommendation we should appreciate it if the Speaker will permit these remarks to be attached.

Resolutions Supporting Establishment of Committee on Medical Service

Dr. Karl S. J. Hohlen, Nebraska, introduced the following resolutions, which were referred to the Reference Committee on Legislation and Public Relations:

WHEREAS, A resolution will be introduced in the House of Delegates of the American Medical Association during the annual assembly convening June 7, 1943 in Chicago which provides for the creation of a committee to be known as the Committee on Medical Service; and

WHEREAS, The House of Delegates of the Nebraska State Medical Association in annual assembly May 4, 1943 is heartily in accord with the principles expressed in that resolution; therefore be it

Resolved, That the house of delegates of the Nebraska State Medical Association urge the House of Delegates of the American Medical Association to adopt the resolution; be it further

Resolved, That the Constitution and By-Laws of the American Medical Association be amended, if necessary, in order that the aforementioned resolution can be adopted; and be it further

Resolved, That the delegates of the Nebraska State Medical Association to the House of Delegates of the American Medical Association are hereby instructed to do all in their power to effect the adoption of the resolution and, if necessary, amend the Constitution and By-Laws.

Resolution Requesting Changes in Administration of Federal Security Law so as to Assure Payment of the Physician

Dr. Walter P. Anderton, New York, presented the following resolution, which was referred to the Reference Committee on Legislation and Public Relations:

WHEREAS, Experience in New York State has shown that doctors rendering authorized care to recipients of relief in those categories which are covered by federal reimbursement regulations are in many cases, particularly in old age assistance, not receiving payment for their services because of the failure of the recipients of such services to pay to the physicians the money given them for such payment; and

WHEREAS, The house of delegates of the Medical Society of the State of New York has gone on record as favoring such changes in the administration of the Federal Security Law as are necessary to assure payment of the physician; and

WHEREAS, The house of delegates of the Medical Society of the State of New York has gone on record as requesting the aid of the American Medical Association; therefore, be it

Resolved, That the House of Delegates of the American Medical Association memorialize the proper authorities to secure such changes in the administration of the Federal Security Law as are necessary to assure payment of the physician.

Resolutions Requesting Establishment in Washington, D. C., of Office of Information of American Medical Association

Dr. Arthur S. Risser, Oklahoma, introduced the following resolutions, which were referred to the Reference Committee on Legislation and Public Relations:

WHEREAS, The American Medical Association is the parent organization of all state medical associations and is therefore looked to for leadership by the public in matters pertaining to health and welfare; and

WHEREAS, The office of the American Medical Association and its executive officers are located in Chicago, Illinois, and therefore not

easily accessible to the Congress of the United States and other departments of the federal government dealing with matters of health for the people; now, therefore, be it

Resolved, By the house of delegates of the Oklahoma State Medical Association, that its delegates be instructed either to introduce or to support a resolution such as that proposed by the National Conference on Medical Service and the Federated Medical Boards of Examiners, which will establish an office of information of the American Medical Association in Washington, D. C., with full time personnel in attendance in order that the Congress and bureaus of the federal government may have the advice and guidance of the American Medical Association on health legislation at all times; it is further

Resolved, That the delegates of the Oklahoma State Medical Association to the American Medical Association be instructed to work to the end that any committee, council, bureau or board appointed by the Board of Trustees of the American Medical Association, to act in an advisory capacity to a Bureau of Information in Washington, D. C., be of sufficient size to have representation on it of physicians taken from geographic localities of the United States and that these physicians be in the majority to any other physicians appointed to a committee, council, bureau or board; and it is still further

Resolved, That any appointments to any committee, council, bureau or board by the Board of Trustees be made on the recommendations of the delegates from the states represented in the different geographic divisions.

Resolutions Expressing Approval of Federal Assistance to Wives and Children of Service Men as Outlined in Plan Under Consideration by Federal Children's Bureau

Dr. John H. Fitzgibbon, Oregon, presented the following resolutions, which were referred to the Reference Committee on Legislation and Public Relations:

Resolved, That approval be expressed of federal assistance to the wives and children of service men as outlined in the plan under consideration by the Federal Children's Bureau; provided, however, that the constituent state medical associations which are members of the Pacific States Medical Executives' Conference be requested to consider carefully the merits of the procedure proposed by the Oregon State Medical Society wherein any allocations for professional services agreed on as compensation for obstetric work involved shall be given to the wives of enlisted men, such patients then to secure the services of physicians as they themselves deem proper, the fee for professional services to be decided by mutual agreement between the patients and the attending physicians; and

Resolved, That the conference secretary send outlines of the Oregon plan to the constituent state associations; and further

Resolved, That the suggestion be made that a special committee composed of representatives of the Pacific states medical associations be brought into being, if possible, to consider further the aforementioned Oregon plan.

Resolution Urging the Creation of a Federal Department of Health

Dr. Thomas A. McGoldrick, New York, introduced the following resolution, which was referred to the Reference Committee on Legislation and Public Relations:

WHEREAS, Coordination of all agencies working for the maintenance of health and the prevention and cure of disease is becoming increasingly important in our daily lives; and

WHEREAS, The problems of medical care could best be coordinated and correlated under the guidance of a central agency; be it

Resolved, That the American Medical Association urge with all the power at its command that a federal Department of Health be created to be headed by a Secretary of Health, who shall be a properly qualified doctor of medicine who is a member of a component county medical society.

Resolution Approving Proposed Changes in Regard to Medical Services of the American Red Cross in Disaster Relief

Dr. Arthur T. McCormack, Kentucky, presented the following resolution, which was referred to the Reference Committee on Legislation and Public Relations:

WHEREAS, This Association approved the policies of the American Red Cross in disaster relief at its session on July 2, 1938; and

WHEREAS, The American Red Cross is proposing the following changes in its handbook setting forth its policies in regard to medical services in disaster; now, therefore, be it

Resolved, By the House of Delegates of the American Medical Association, that the proposed changes in regard to medical services of the American Red Cross in disaster relief be approved as follows:

RELATIONSHIP WITH PHYSICIANS, DENTISTS AND HOSPITALS

III-3. The primary responsibility for the care of the sick and injured in disasters rests with the local physicians. Red Cross medical service does not substitute for the services of local physicians and dentists but cooperates with them and assists by organizing and directing the medical relief work and by providing the facilities which they lack and need for the emergency. Every effort is made to maintain and reestablish as quickly as possible the predisaster relationship between physicians and dentists and their patients. In the first few days it is often necessary to apply aid on a mass basis in emergency medical stations. This practice is discontinued as soon as possible and patients are referred to their own physicians and dentists.

Red Cross medical and dental assistance is intended only for those who are ill or injured because of the disaster, or whose condition is aggravated by the disaster, and who are unable to obtain care because of lack of resources. Exceptions may be made in certain emergencies, obstetrics for example, when medical service is not otherwise available.

III.-4. It is hoped that physicians and dentists, like other community leaders engaged in various phases of disaster relief work, will give their services on a volunteer basis for patients unable to pay during the emergency period. On approval of the director, actual expenses incurred and cost of the supplies used by physicians and dentists may be paid those volunteering their services in the emergency period. Unless they have been previously employed for that purpose, physicians should not be paid for work during this emergency period.

After an emergency period, the duration of which is to be determined by the disaster director, advised by his medical director after conference with representatives of the county medical society, the Red Cross recognizes its responsibility to the medical profession for paying reasonable fees to physicians who treat disaster victims. Reasonable fees shall be interpreted as ward clinic or county rates and shall be worked out by mutual understandings between medical directors and state and local medical societies prior to or during a disaster operation.

III.-5. Reasonable hospital rates, including ordinary service, medicine, dressings, operating room, x-rays, serums, antitoxin and other biologics may be paid on a case work basis for the care of patients with disaster caused illness or injuries or those whose condition is aggravated by the disaster. Blood plasma which cannot be replaced from stocks accumulated for that purpose or from volunteers who are willing to replace that used from local blood banks may be paid for at cost. Ward rates are generally considered reasonable. Commitments shall not be made until agreements have been approved by the disaster director. Verbal agreements between hospitals and the Red Cross shall be given written confirmation by the medical director.

Resolution Requesting Study of Nursing Licensure Requirements

Dr. Stephen E. Gavin, Wisconsin, presented the following resolution, which was referred to the Reference Committee on Medical Education:

WHEREAS, For many years there has been a continuous and meritorious effort to elevate the requirements for nursing licensure in the several states; and

WHEREAS, These efforts, directed toward the establishment of a qualified and recognized field of nursing provided with such safeguards as to assure the maximum protection to the public health, have resulted in increasing difficulties in securing an adequate number of enrollees in the various nursing schools; and

WHEREAS, There is a current shortage of nurses and because of the reciprocal arrangements between states an inability exists on the part of the individual states, as such, to make such changes in their laws as would facilitate the enrolment and graduation of trained nurses; now, therefore, be it

Resolved, That the House of Delegates of the American Medical Association request the Council on Medical Education and Hospitals to study the nursing licensure requirements of the several states and the problem created by the war emergency and, in cooperation with the several state medical associations, to suggest such changes as may be indicated on the national level consistent with good public health protection and so designed as to increase the availability of nurses within the country.

Resolution Requesting Constituent Associations and Component Societies to Consider the Establishment of Some Form of Dues for Their Members in Service

Dr. James C. Sargent, Wisconsin, presented the following resolution, which was referred to the Reference Committee on Miscellaneous Business:

WHEREAS, Motivated by the finest sort of patriotic interest, our component county medical societies and constituent state medical associations everywhere throughout the land have acted to remit, for the duration, the dues of those of us who have been called to the colors; and

WHEREAS, A realistic view of the enormous military program to which our country is committed surely suggests that this action may, over some protracted years, undermine the financial structure of many of these local organizations; and

WHEREAS, It is most important to the future of American medicine that the already large and ever growing block of physicians temporarily dislocated from home and practice be kept intimately connected with and an active part of their local professional organizations; be it hereby

Resolved, That this House of Delegates urge on each of its constituent state associations and, through them, each of the component county medical societies of which they in turn are composed, to give consideration to the establishment of some form of dues for their members in service which will not be great enough to blunt in the least the fine compliment originally intended but which will be adequate to insure the long term financial position of their organization as well as the active interest and participation of their absent members.

Resolution Authorizing Establishment of an Executive Office of American Medical Association in Washington, D. C.

Dr. Barney J. Hein, in behalf of the Ohio State Medical Association, presented the following resolution, which was referred to the Reference Committee on Legislation and Public Relations:

WHEREAS, The medical profession is conscious of its responsibilities in providing medical services to all of the American people; and

WHEREAS, The medical profession believes that it is its duty to make available scientific facts, data and medical opinion with respect to existing and proposed medical and health programs and is ready to offer constructive leadership on such matters; and

WHEREAS, Many proposals relating to medical and health services during the postwar era are under consideration at Washington, involving legislation and regulatory procedures; and

WHEREAS, It has become increasingly important that first hand information on such matters should be made available to the medical profession generally and vital relationships established between the medical profession and members of the legislative and executive branches of the federal government so that the views of the medical profession can be transmitted promptly to proper officials of such branches; therefore be it

Resolved, That the House of Delegates of the American Medical Association authorize the establishment of an executive office of the American Medical Association at Washington, D. C., in charge of a full time director who shall be directly responsible to the Board of Trustees of the American Medical Association in serving as a liaison on legislative and governmental activities pertaining to medical and health matters.

Resolution on Technical X-Ray Training Courses

Dr. E. H. Skinner, Section on Radiology, presented the following resolution, which was referred to the Reference Committee on Medical Education:

WHEREAS, It is the function of the American Registry of X-Ray Technicians to elevate the standards and improve the training of x-ray technicians; and

WHEREAS, The American Registry of X-Ray Technicians has established a list of approved training courses for x-ray technicians which have been investigated and deemed adequate for their purpose; and

WHEREAS, The recognition of such training courses by the Council on Medical Education and Hospitals of the American Medical Association is desirable for the proper inspection and maintenance of these courses; therefore, be it

Resolved, That the House of Delegates of the American Medical Association recommend this to the Council on Medical Education and Hospitals for proper action.

It was moved by Dr. Francis F. Borzell, Pennsylvania, that action on all resolutions referring to the establishment of a bureau or service in Washington be reported in Executive Session. The motion was seconded by Dr. Burt R. Shurly, Section on Laryngology, Otology and Rhinology, and carried.

Report of Reference Committee on Rules and Order of Business

Dr. R. L. Zech presented the following report, which on motions of Dr. Zech, duly seconded and carried, was adopted section by section, the second section of the report by more than a two-thirds vote of the members registered:

1. Your Reference Committee on Rules and Order of Business recommends that on Tuesday, June 8, after completion of routine business, the House shall enter into Executive Session.

2. WHEREAS, Section 4, chapter 4 of the Constitution and By-Laws provides for the election of officers on Thursday, the fourth day of the meeting of the House of Delegates; and

WHEREAS, The same section 4, chapter 4, provides that the election of officers may be held at another time provided for in the same section; and

WHEREAS, It is important that the physicians attending this session of the House of Delegates be able to return to their practices at an early date; therefore be it

Resolved, That the House of Delegates hold the election of officers on Wednesday, June 9, 1943, immediately following the completion of routine business.

Respectfully submitted,

R. L. ZECH, Chairman.
E. N. ROBERTS.
GEORGE P. JOHNSTON.
EDWARD N. EWER.
A. A. WALKER.

The House recessed at 2:05 p. m., to meet at 9:30 a. m. Tuesday, June 8. *(To be continued)*

MEDICAL LEGISLATION

MEDICAL BILLS IN CONGRESS

Changes in Status.—H. R. 2536 has passed the House, a bill to provide for the promotion of vocational rehabilitation of persons disabled in industry or otherwise. H. R. 2713 has passed the Senate, making appropriations for the Navy Department and the naval service for the fiscal year ending June 30, 1944. This bill as passed by the Senate retains the language under which appropriations made available for the Navy Department may be utilized to pay commissioned medical officers who are graduates of reputable schools of osteopathy.

Bills Introduced.—S. 1130, introduced by Senator Thomas, Utah, proposes to enact the "War-Area Child-Care Act of 1943." A federal appropriation of $1,500,000 will be authorized for the fiscal year ending June 30, 1943 and an appropriation for each fiscal year thereafter of $20,000,000 for allotments to the states, with the proviso that the program will expire six months after the end of the war. State plans for day care services must be submitted by the state public welfare agency and approved by the chief of the Children's Bureau, and state plans for extended school services must be submitted by the state educational agency and approved by the United States Commissioner of Education. A state plan for day care services, among other things, may provide for care through foster family home services or in day care centers, community-wide information and advisory services for mothers, health services for children, and other auxiliary services necessary to assure proper use of day care facilities and to safeguard children receiving care under the plan. H. R. 2832, introduced by Representative Gearhart, California, proposes to amend the Nationality Act of 1940 so as to permit naturalization proceedings to be had at places other than in the office of the clerk or in open court in the case of sick or physically disabled individuals. H. R. 2892, introduced by Representative Sparkman, Alabama, provides that during the present war and for six months thereafter there shall be included in the Medical Departments of the Army and Navy such licensed female dentists as the Secretary of War and the Secretary of the Navy may consider necessary. Those appointed will be commissioned in the Army of the United States or in the Naval Reserve and will receive the same pay and allowances and be entitled to the same rights, privileges and benefits as members of the Officers' Reserve Corps of the Army and the Naval Reserve of the Navy with the same grade and length of service.

STATE MEDICAL LEGISLATION

Alabama

Bill Passed.—Substitute for S. 22 passed the senate, June 1. It would require the state board of health, with the assistance of the committee on cancer control of the Medical Association of the State of Alabama, to formulate a plan for the care and treatment of indigent persons suffering from cancer and to establish and designate standard requirements for the organization, equipment and conduct of cancer units or departments in general or private hospitals or private clinics of the state. The board would also be required to formulate and put into effect an educational plan for the purpose of preventing cancer

throughout the state, aiding in the early diagnosis of cancer and informing hospitals and cancer patients of the proper treatment.

Bill Enacted.—S. 35 has become Governor's Act No. 89 of the Laws of 1943. It provides for the creation and establishment of a four year school of medicine in the state to be under the sole management, ownership and control of the Board of Trustees of the University of Alabama and to be known as "The Medical College of Alabama."

California

Bills Enacted.—S. 1023 has become chapter 1001 of the Laws of 1943. It prohibits the possession, transportation or use of any local anesthetic of the cocaine group, including but not limited to natural or synthetic drugs of this group, such as allocaine, apothesine, alypine, benzyl carbinol, butyn, procaine, nupercaine, beta-eucaine, novol or anestubes, within a horse racing inclosure, except on a bona fide veterinarian's prescription with complete statement of uses and purposes of the same on the container. A. 573 has become chapter 1047 of the Laws of 1943. It prohibits the board of osteopathic examiners from issuing any drugless practitioner's certificates and provides that all persons holding such certificates may continue to practice thereunder and may renew them, subject to the provisions of the law. A. 829 has become chapter 871 of the Laws of 1943. It amends the law relating to premarital examinations by providing that certificate forms furnished by other states having comparable laws will be accepted for persons who have been examined and who have received serologic tests for syphilis outside of California provided such examinations and tests are performed not more than thirty days prior to the issuance of a marriage license. The amendment further provides that certificates furnished by the United States Army or Navy will be accepted for military personnel provided such certificates are signed by a medical officer commissioned in the United States Army or Navy and provided the certificates state the examinations and serologic tests for syphilis were performed not more than thirty days prior to the issuance of the marriage license. A. 1191 has become chapter 914 of the Laws of 1943. It amends the welfare and institutions code by providing that no person shall maintain an establishment for the mentally ill without having obtained a license from the state department of institutions. A. 1335 has become chapter 977 of the Laws of 1943. It amends the law relating to the use and sale of poisons by, among other things, adding the following poisons to schedule C 1: acetylurea, sulfonated methanes, paraldehyde, sulfanilamide except in tablets of 30 grains or more designed for stock purposes only and so labeled, sobisminol, amidopyrine, cinchophen, ergot, diethylstilbestrol, provided that they may be sold only at retail on order or prescription of a physician, dentist, chiropodist or veterinary surgeon duly licensed to practice in California and shall not be refilled without order of the prescriber; to schedule C 2: amphetamine, thyroid, phenylhydantoin or their compounds, provided they are sold only at retail on the written order or prescription of a physician and surgeon, dentist, chiropodist or veterinary surgeon licensed to practice in the state, but such prescription may be refilled for the person for whom originally written.

Connecticut

Bill Passed.—Substitute for S. 484 passed the senate and the house on May 19. To amend the law relating to the labeling and sale of drugs, it proposes to add narcotic drugs to the list of drugs which a physician, veterinarian or dentist is prohibited from prescribing except for emergency use.

Bills Enacted.—S. 257 has become chapter 291 of the Laws of 1943. It amends the medical practice act by requiring applicants for license to show that they have received the degree of doctor of medicine, rather than merely a diploma of graduation, from an approved school. S. 804 has become chapter 286 of the Laws of 1943. It amends the chiropractic law by eliminating the requirement of professional study for a period of four years of thirty-six weeks each and substituting therefor the requirement that such course consist of four years of eight months each, totaling not less than three thousand six hundred hours. H. 1198 has become chapter 301 of the Laws of 1943. It requires each physician to report in writing to the health officer of the town, city or borough in which such case shall occur, within twelve hours after his recognition thereof, each case of cholera, yellow fever, typhus fever, leprosy, smallpox, diphtheria, typhoid fever, scarlet fever, all forms and stages of syphilis, all forms and stages of gonorrhea, chancroid or other contagious or infectious diseases occurring in his practice.

Florida

Bill Enacted.—S. 580 was approved, June 1, 1943. It provides that the several colleges and universities located and operating in the state of Florida shall be authorized, directed and required to waive the last two semesters of preparatory college work required for entrance to the various professional schools operated by them in all instances where the applicant for admission and study in such professional schools has completed all preparatory college work required for such admission except two semesters or less of study in the preparatory subjects and where such applicant has failed to complete his or her last two semesters or less of preparatory study by reason of his or her having been inducted into any branch of the armed forces of the United States during or after the month of January 1940.

Illinois

Bill Introduced.—H. 802, to amend the medical practice act, proposes that the entry of a decree by any court of competent jurisdiction establishing the insanity of any person holding a license to practice medicine would operate as a suspension of such license until such time as a committee of physicians should find that the licensee has been restored to sanity.

Massachusetts

Bill Passed.—H. 1820 passed the house, June 2. To amend the premarital examination law, it proposes to authorize the execution of the required certificate by a physician registered or licensed to practice in any other state of the United States, territory or District of Columbia, in addition to Massachusetts licentiates.

Bills Enacted.—S. 470 has become chapter 421 of the Laws of 1943. It amends the existing law authorizing any license, permit or certificate of registration issued by any department, division, board, commission or officer that expires while the holder thereof is serving in the military or naval service of the United States to be renewed within six months after the termination of such service and by providing further that no fee shall be charged or collected for the period between the expiration of the certificate and the renewal thereof. H. 1754 has become chapter 375 of the Laws of 1943. To amend the law relating to policies of insurance against legal liability for loss or damage on account of bodily injury or death, it permits such policies to be amended so as to insure any person in respect to medical, surgical, ambulance, hospital, professional nursing and funeral expenses. H. 1755 has become chapter 384 of the Laws of 1943. It amends the law relating to physical examinations of school children by requiring examinations of the feet of such children to be made by the school physician to ascertain any defects which might unfavorably influence the child's health or physical efficiency during childhood, adolescence and adult years. H. 1791 has become chapter 387 of the Laws of 1943. It amends the law relating to the registration of nurses by providing that during the existing war applicants for registration need only be 20 rather than 21 years of age.

Missouri

Bill Introduced.—H. 590, to amend the law relating to the practice of osteopathy, was amended in the house so as to define the practice of osteopathy as the system, method, art or science of treating diseases, injuries or defects of the human body as taught and practiced by the American School of Osteopathy of Kirksville, Mo. The amendment would further provide that any person now licensed or who may hereafter be licensed to practice osteopathy in Missouri, and who is a graduate of a reputable school of osteopathy which, at the time of graduation, offered a full course in medicine and surgery in addition to the regular course of osteopathy, and which school had entrance requirements, facilities, instruction and training of a standard equivalent to the recognized medical colleges of the state, may

on a finding by the state board of health that such person had met the basic requirements, be permitted to take the examination, and, on successfully passing same, to practice medicine and surgery as osteopathic physicians and surgeons.

Nebraska

Bill Enacted.—Bill No. 295 was approved, May 29. It provides that any county or group of counties may establish a county or district health department with a medical director at its head, who shall be required to give his entire time to the duties of his office, and such other necessary qualified full time medical health officers and such sanitary inspectors, public health nurses and clerical assistants as may be necessary to carry on the activities pertinent to a county or district health department.

Pennsylvania

Bills Enacted.—S. 209 has become act 212 of the Acts of 1943. It amends the osteopathic law by providing, among other things, that the board of examiners, by inspection or otherwise, shall examine and fix the rating of all colleges and hospitals outside the state whose graduates or interns desire to obtain osteopathic licensure in Pennsylvania. The standards for approval of osteopathic hospitals in Pennsylvania, however, shall be required in fixing the rating of out of state institutions. S. 244 has become act 217 of the Acts of 1943. It provides that for the duration of the war a minimum of nine months shall constitute the necessary training for an intern in a hospital approved for intern training to qualify for admission to an examination for licensure by the osteopathic surgeons' examining board to practice major surgery in Pennsylvania. S. 371 has become act 230 of the Acts of 1943. It provides that for the duration of the present war and one year thereafter certain persons eligible to registration as a nurse prior to 1938 may be registered by waiver or examination on proof that she meets the Pennsylvania requirement as of the time of her graduation, and without examination if, prior to 1912, she graduated from a reputable hospital, sanatorium or training school in which a systematic course of practical instruction in nursing was given. S. 531 has become act 249 of the Acts of 1943. It authorizes county commissioners of second class counties to enter into contracts with the proper authorities of any city within the county for the hospitalization of persons suffering from any infectious disease and makes appropriations for such purposes. H. 668 and H. 669 have become act 167 and act 168, respectively, of the Acts of 1943. They amend the law regulating and supervising nonprofit medical service corporations by providing, among other things, that subscribers earning more than a certain specified sum shall be liable to doctors of medicine registered with the corporation and rendering services to such persons for the full amount of the usual fees and charges for such services made by doctors of medicine and any payment made by the corporation to doctors for rendering such services shall be a payment on account only and not necessarily in full. H. 823 has become act 182 of the Acts of 1943. It amends the law relating to the physical examination of school children by providing that for the duration of the present hostilities and for six months thereafter the examination may be made by any physician licensed to practice medicine in Pennsylvania if the parent or guardian or employer is willing to pay for the same. Previously the examination had to be made by a physician employed by the board of school directors of the school district in which the minor resided or by a physician employed by the state department of health.

South Carolina

Bill Enacted.—H. 518 was adopted, April 1. It is a resolution providing for the appointment of a committee to examine into the advisability of establishing a cancer clinic and hospital in the state.

Texas

Bill Enacted.—H. 20 became a law without approval, June 1. It provides for the creation of a separate state board of examiners for chiropractors and defines chiropractic to be the science of analyzing and adjusting the articulations of the human spinal column and its connecting tissues without the use of drugs or surgery. Under this law chiropractors will not be allowed to treat any person for infectious or contagious diseases or engage in the practice of medicine. S. 230 was approved, May 22. It provides that no person shall operate or cause to be operated any emergency ambulance, public or private, or any other vehicle commonly used for the transportation or conveyance of the sick or injured, without first securing a permit therefor from the state board of health. Every such ambulance shall be equipped with a first aid kit and traction splints for the proper transportation of fractures of the extremities and shall be accompanied by at least one person who has acquired theoretical or practical knowledge in first aid as prescribed and certified by the American Red Cross and evidenced by a certificate issued to such person by the state board of health.

Wisconsin

Bills Enacted.—S. 36 has become chapter 247 of the Laws of 1943. It amends the law relating to coroners so as to provide for the appointment of medical examiners. S. 195 has become chapter 172 of the Laws of 1943. It amends the law relating to deputy state health officers by increasing the annual salary thereof from 3 to 4 thousand dollars. A. 433 has become chapter 195, Laws of 1943. It provides for an appropriation by county boards toward the maintenance and support of duly organized and bona fide nursing associations in the county, such associations to have at least one qualified nurse. A. 486 has become chapter 125 of the Laws of 1943. To amend the law relating to positions in the unclassified civil service in certain counties in the state, it provides that students and interns in medical or professional specialties shall be included within the list of unclassified civil service positions.

MEDICAL ECONOMIC ABSTRACTS

PRESCHOOL CHILD MORTALITY

One of the best tests of success in maintaining the health of the public is child mortality. During the greater part of the nineteenth century it was frequently stated that more than half the deaths in any community were those of children under 5 years of age. Even at the beginning of the present century "the death rate for the 1 to 4 year age group was 19.8 per thousand children," [1] but by 1940 this rate had fallen to 2.9, or one ninth of the rate forty years previously. Not only do a much larger percentage of the children born reach the age of 4, but the increase in life expectancy indicates that "the preschool child of today will probably live, on the average, about six or seven years longer than the preschool child of forty years ago."

There are still sharp racial differences in child mortality so that "in general the life expectancy of the nonwhite child is about ten years less than for white children of the same sex." There are also significant sectional differences, varying from a rate of 4.9 per thousand in the West South Central states to 1.9 in Minnesota, Iowa and Wisconsin. Cities of over 100,000 show a uniformly lower death rate than the smaller cities and rural districts, a condition which is accredited to "the opportunities of generally better and more nearly adequate facilities for medical care in the cities. The specific immunization to some of the more important childhood diseases is of particular importance in this connection."

Certain of the diseases most deadly to children in 1900 have shown significant declines in importance. While influenza and pneumonia, diarrhea, enteritis and tuberculosis are still important as causes of death among children, the toll of these diseases has been decreased to a fraction of what it was forty years ago, while accidents now rank second as the cause of fatalities.

1. The Preschool Child, Bureau of Census, Vital Statistics, Special Reports, Mortality Summary, Feb. 19, 1943.

Medical News

(PHYSICIANS WILL CONFER A FAVOR BY SENDING FOR THIS DEPARTMENT ITEMS OF NEWS OF MORE OR LESS GENERAL INTEREST: SUCH AS RELATE TO SOCIETY ACTIVITIES, NEW HOSPITALS, EDUCATION AND PUBLIC HEALTH.)

ARKANSAS

District Meetings.—The eighty-first semiannual meeting of the First Councilor District Medical Society of Northeast Arkansas was addressed, May 27, in Jonesboro by Drs. Herbert H. McAdams, Jonesboro, on "Appendicitis" and Neuton S. Stern, Memphis, Tenn., "Heart Neurosis." The district society is composed of Clay, Craighead, Crittenden, Greene, Lawrence, Mississippi, Poinsett and Randolph counties.——The Fifth Councilor District Medical Society was addressed at Magnolia, May 20, by Drs. Charles Robert Watson and George V. Lewis, Little Rock, on "Neurosurgical Conditions in General Practice" and "Treatment of Burns," respectively. The fifth district includes Calhoun, Columbia, Dallas, Lafayette, Ouachita and Union counties.

CALIFORNIA

Changes in Health Officers.—Dr. Concessa L. Craviotto has been appointed health officer of Oroville, succeeding Dr. Charles Benninger Jr.——Dr. Dean Eldon Hart, Oakland, was appointed health officer of Emeryville, succeeding Dr. Charles Newell Mell, Oakland.——Dr. James L. Faulkner has replaced Dr. Russell G. Frey as health officer of Red Bluff.

New Dean of College of Medical Evangelists.—Dr. Newton G. Evans, professor and head of the department of pathology and a member of the board of trustees of the College of Medical Evangelists, Loma Linda-Los Angeles, on May 5 was unanimously elected dean to succeed the late Dr. Edward H. Risley, Loma Linda. Dr. Evans, who graduated at Cornell University Medical College, New York, in 1900, has been head of the department of pathology for thirteen years. He is also chief pathologist of the Los Angeles County Hospital.

Quarantine on Mussels.—The state department of public health on May 1 placed a quarantine on all mussels along the ocean shores of California including the bay of San Francisco, from the Oregon-California boundary line on the north to the California-Mexico boundary on the south. The taking, sale or offering for sale of mussels in or from the area specified is prohibited, with the exception that permission may be given to take mussels to be used for fish bait, if such mussels are rendered unfit for food purposes by processing with salt. These processed mussels must be placed in containers labeled "For Fish Bait Only—Unfit for Human Consumption." The quarantine will be in effect until October 31.

DISTRICT OF COLUMBIA

Physician Indicted on Narcotic Charge.—Dr. Homer K. Butler, Washington, was indicted, May 24, on charges of violation of the Harrison Narcotic Act. According to the Washington *Post*, Dr. Butler was charged with writing prescriptions for about 60 grains of morphine between July 1942 and January 1943. The prescriptions are alleged to have been written for the same person but under different names.

Pathologist Dies.—Gilbert T. Creech, D.V.M., since 1912 veterinary pathologist in the division of pathology of the U. S. Department of Agriculture, died on June 2 in Garfield Memorial Hospital, aged 63. Dr. Creech received his D.V.M. at the Kansas City Veterinary College in 1910 and joined the department of agriculture the same year, first serving as veterinary inspector in the field and meat inspection division of the bureau of animal industry.

ILLINOIS

Personal.—Effective July 5, Reuben F. Reider, passed assistant surgeon, reserve, serving in Illinois on loan from the U. S. Public Health Service, is the state's district health superintendent for the counties of Coles, DeWitt, Douglas, Edgar, Macon, McLean, Moultrie and Piatt, with headquarters in Decatur. Dr. Reider replaces Dr. Wilmier M. Talbert, Decatur, who has been granted a military leave from state service to enter the U. S. Navy.

Chicago

League for Planned Parenthood.—Dr. Eugene A. Edwards was chosen president of the Illinois League for Planned Parenthood at the recent annual meeting and Mrs. William B. Goltra as secretary. Mrs. Ben Humphries Gray is the executive secretary. Among the topics discussed at the meeting were "Nation, State and Local Planned Parenthood Trends," "Planning for Democracy," "Importance of Planned Parenthood in Peace and War" and "Understanding the Emotional Responses to Planned Parenthood."

Meeting of Pathologists.—The Illinois Society of Pathologists presented the following program at its meeting in the Palmer House May 18:

Lieut. Comdr. Jerry J. Kearns (MC), U.S.N.R., Duties of a Pathologist in a Naval Hospital.
Joseph M. Lubitz, assistant surgeon, U. S. Public Health Service Reserve, Duties of a Pathologist in the Public Health Service.
Dr. Gail M. Dack, Food Poisoning.
Dr. Heinrich Necheles and William H. Olson, Studies on Pathologic Physiology of Burns.
Dr. Howard C. Hopps, The Use of Gelatin as a Blood Substitute.

The afternoon was devoted to a seminar with cases and microscopic slides being presented by the members. The next meeting will be in November.

IOWA

Special Society Election.—Dr. Helen Johnston, Des Moines, was chosen president-elect of the State Society of Iowa Medical Women at its annual meeting in Des Moines, April 28, and Dr. Christine S. Ericksen-Hill, Council Bluffs, was installed as president. Other officers are Drs. Gladys A. Cooper, Red Oak, vice president; Erma A. Smith, Ames, secretary, and Edna K. Sexsmith Harper, Greenfield, treasurer.

Diets and Food Rationing.—The Polk County Medical Society, Des Moines, recently issued a special message to the public listing eight points by which the public could cooperate with the medical profession in providing essential medical care. In addition the society has cooperated with the local ration boards by drawing up special diets to be available during the rationing program. These diet lists and instructions of the procedure to be followed by physicians and their patients have been printed in the state medical journal and issued in special bulletins.

Sight Saving Program.—The general assembly has granted an appropriation to the state board of education to establish a sight saving class at the Iowa School for the Blind when school opens, September 7. A classroom will be equipped to meet the sight saving standards set forth by the National Society for the Prevention of Blindness, including special artificial lighting, window shades, blackboards, large type books, sight saving desks and bulletin type typewriters. A teacher with special training in sight saving will be employed to handle the schoolroom work. Children may be considered eligible for sight saving classes if they are in any of the following groups: children having a visual acuity betwen 20/70 and 20/200 in the better eye, after refraction; children with progressive eye difficulties, and children suffering from noncommunicable diseases of the eye or diseases of the body that seriously affect vision.

KANSAS

Course in Tropical Medicine.—The Kansas Medical Society and the University of Kansas School of Medicine, opened a postgraduate course in tropical medicine in Emporia, May 22-23, the first in a series to be given in cities throughout the state. The second was held in Wichita, May 29-30, and the third in Salina, June 12-13; courses are planned for Parsons, Kansas City and Topeka. The instructors include Dr. Harry L. Douglas, assistant professor of medicine, University of Kansas School of Medicine, Kansas City; Herbert B. Hungerford, Ph.D., professor of entomology of the University of Kansas, Lawrence, and Mary E. Larson, A.M., assistant professor of zoology of the University of Kansas.

MICHIGAN

Personal.—Dr. Donald M. Morrill, formerly medical superintendent of the City of Detroit Receiving Hospital, has been appointed director of the Malden Hospital, Malden, Mass. Dr. Ralph R. Piper, Detroit, has been named acting superintendent for the duration.——Dr. George H. Cook, Caro, has been appointed medical superintendent at the Ionia State Hospital, Ionia.

Proposed Wayne County Hospital Approved.—The Ways and Means Committee of the Wayne County Board of Supervisors recently approved the proposed new Wayne University County Hospital and appointed a special subcommittee to make a more careful study of the project. The hospital, to be operated by the Wayne University College of Medicine, Detroit, was recently approved by the board of education when

it sanctioned the general plan for the proposed Detroit Medical Center to be constructed on a 50 acre site on Jefferson Avenue near Burns.

Lieutenant Boelkins Wins Fellowship.—Dr. Richard C. Boelkins, first lieutenant in the medical corps of the A. U. S. Air Corps, has been awarded the 1943 Edward and Susan Lowe Fellowship at Butterworth Hospital, Grand Rapids. The fellowship is awarded annually to one of the hospital's younger staff members on the "basis of increased ability in diagnosis and treatment, cooperative spirit and willingness to teach others, including the interns." Lieutenant Boelkins graduated at the University of Michigan Medical School, Ann Arbor, in 1937 and interned at Butterworth Hospital.

Malaria Control.—Dr. H. Allen Moyer, Lansing, state health commissioner, has invited Charles L. Williams, medical director and chief of malaria control, U. S. Public Health Service, to discuss possible control measures in the Calhoun County area with army, state and county health authorities, it was announced on May 27. Plans are under consideration for the establishment of a mosquito control area in western Calhoun County to lessen the hazard of spread of the disease from soldiers returned to the Percy Jones Hospital, Battle Creek, from the southwest Pacific, but elsewhere citizens may have to institute their own control measures, it was stated.

"Proof of Disability" Blank.—The Ingham County Medical Society has adopted a "proof of disability" blank which is designed as a time saver for physicians and which specifies that any further information may be obtained by the insurance company for a fee of $2. At the convention of the state medical society in 1927, the fee was set as a fair charge for the search of records and the compiling of information for a medical insurance proof of disability. The blank may be procured from the state medical society at 2020 Olds Tower, Lansing. Under the stress of war conditions in the practice of medicine, the burden of giving adjustment and investigational information to health insurance companies has become more time consuming than appears to be necessary to furnish adequate proof of disability, an announcement stated.

NEW JERSEY

Princeton Buys Physician's Home.—Princeton University, Princeton, has bought the home of its oldest living alumnus, Dr. William H. Vail, 97 years old, of Newark. According to the New York *Times*, Princeton has taken title to the house at 141 Second Avenue so the retired physician, last surviving member of the class of 1865, might continue to occupy it "as long as he may desire." The action, which was approved by the university's board of trustees, was made possible by gifts from alumni and friends, specifically earmarked for the purpose. Dr. Vail graduated at Princeton at the close of the Civil War, after playing on the university's first baseball team. He graduated at the College of Physicians and Surgeons of Columbia College, New York, in 1869, of which he is also said to be the oldest living alumnus. Dr. Vail retired from active practice about thirty years ago. During the past few months he has been ill at home suffering from the effects of a fall.

NEW YORK

Personal.—Alfred Einar Sherndal, Ph.D., New York, plant superintendent of Winthrop Chemical Company since 1934, recently received the honorary degree of doctor of science from St. Lawrence University, Canton, for his research work in making possible the synthesis and manufacture of atabrine.

Diabetic Camp Opens July 1.—Camp Nyda at Wallkill will open on July 1 to receive about one hundred underprivileged diabetic children of New York, where they will spend a two week vacation under the auspices of the New York Diabetes Association. This year will mark the seventh for the operation of the camp. The medical department of the camp is under the supervision of Dr. Herman O. Mosenthal, clinical professor of medicine at the New York Post-Graduate Medical School and Hospital, Columbia University.

Dr. MacCurdy Appointed Commissioner of Mental Hygiene.—Dr. Frederick MacCurdy, superintendent of the Vanderbilt Clinic of the Columbia University Presbyterian Medical Center and professor of hospital administration of Columbia University, on June 3 was appointed by Governor Dewey as state commissioner of mental hygiene. The New York *Times* reported that Dr. MacCurdy's appointment was made possible by the recent enactment of a law repealing the requirement that the commissioner of mental hygiene must have at least ten years of psychiatric experience in a mental hospital. While Dr. MacCurdy once specialized in neurology and psychiatry, he would not have qualified for the commissionership under the old law. Dr. MacCurdy graduated at Columbia University College of Physicians and Surgeons in 1912. He was formerly president of the state hospital association and is said to be one of the original members of the board which planned and constructed the Columbia Presbyterian Medical Center, serving there since 1928 as superintendent of the Vanderbilt Clinic.

New York City

Crime in Wartime.—A symposium on crime in wartime constituted a recent meeting of the International Spanish Speaking Association of Physicians. Among the speakers discussing the various aspects of the crime dilemma in wartime were Drs. George W. Henry, psychiatrist, R. S. Banay, criminologist, and J. Wilder, neurologist. Dr. Ricardo Adolfo de la Guardia, president of Panama, was present at the meeting and accepted the honorary presidency of the association.

Memorial Trees Planted.—A tree planting ceremony was held at the Richmond Memorial Hospital, Dreyfus Foundation, Staten Island. Services memorialized with one tree each were the army, navy, merchant marine, marine corps and coast guard. One was named for Dr. Herbert Lynn Halbert, former president of the Richmond County Medical Society, who died April 7, and one for Dr. Harry Eckstein, member of the staff, who died March 21. Other trees honored the memories of a member of the Ladies Auxiliary, a nurses aide on the staff and a maintenance man at the hospital.

Gifts to New York University.—More than $201,000 has been given to New York University during the past three months, according to *Science*, March 26, including $100,000 from the George F. Baker Charity Trust, half of which will be used to increase the endowment of the Samuel A. Brown professorship of therapeutics. The remainder will be used for the college of medicine at the discretion of Dr. Currier McEwen, dean of the medical school. The Commonwealth Fund gave $9,784 to the college of medicine for the study of hypertensive and renal diseases, research in obstetrics and gynecology and other uses.

Gynecologist Honored.—On June 8 Dr. Hiram N. Vineberg, consulting gynecologist at the Mount Sinai Hospital, was presented with a special volume of scientific writings to mark his completion of sixty-five years in the practice of medicine. The volume is the gift of Dr. Vineberg's colleagues and consists of a three hundred and sixty page issue of the *Journal of the Mount Sinai Hospital*. In 1878 Dr. Vineberg graduated at McGill University Faculty of Medicine, Montreal. In 1894 he was appointed chief of staff in the outpatient department in Mount Sinai Hospital, where he has been ever since, having been appointed consulting gynecologist on his retirement from active service in 1921. In 1918 he was president of the New York Obstetrical Society and in 1926 a vice president of the American Gynecological Society.

Personal.—Dr. John B. Lauricella has resigned as medical director of the State Insurance Fund, the New York *Times* reported recently.——Dr. David D. Rutstein, Albany, has been appointed deputy commissioner in the New York City Health Department.——The Medical Society of the County of Kings and the Academy of Medicine of Brooklyn recently presented Mr. Charles Frankenberger, Brooklyn, with a watch in recognition of his completion of twenty-five years' service as librarian.——Dr. Henry Roth, a charter member of the Bronx County Medical Society, was given a dinner on April 7 to observe his completion of fifty years in the practice of medicine.——Lorenz J. Brosman, counsel for the Medical Society of the State of New York for about twenty years, died on April 13, aged 49.——Vincent du Vigneaud, Ph.D., head of the department of biochemistry at Cornell University Medical College, is the new chairman of the New York Section of the American Chemical Society.

NORTH CAROLINA

State Health Officer Reelected.—Dr. Carl V. Reynolds, Raleigh, was reelected secretary and state health officer at a recent meeting of the state board of health, and Dr. George M. Cooper, Raleigh, was reelected assistant state health officer; both are for terms of four years.

State Medical Election.—Dr. Paul F. Whitaker, Kinston, was chosen president-elect of the Medical Society of the State of North Carolina at its annual meeting in Raleigh, May 12, and Dr. James W. Vernon, Morganton, was installed as president. Other officers include Drs. Frederic C. Hubbard, North Wilkesboro, and George L. Carrington, Burlington, vice presidents, and Roscoe D. McMillan, Red Springs, secretary-treasurer and delegate to the American Medical Association. The society voted to hold its 1944 session at Pinehurst.

OHIO

Survey on Availability in Industrial Work.—The committee on industrial medicine and health of the Academy of Medicine of Cincinnati is making a survey of its members to learn what physicians are willing to accept a full or part time assignment as physicians in industrial plants. About a year ago the academy assembled similar information, but since then a number of physicians who indicated their willingness to cooperate in industrial activities have gone into military service. The new survey aims to bring up to date the number of physicians that would be willing to assist in this type of service.

Conference on Conservation, Nutrition and Human Health.—The second annual conference on conservation, nutrition and human health will be held at Tar Hollow, June 26-27. Among the speakers will be:

Dr. William F. Petersen, Chicago, Weather and Man.
Dr. Norman C. Wetzel, Cleveland, The Biology of Growth.
Dr. George M. Curtis, Columbus, The Role of Iodine in the Nutrition of Soil, Bacteria Plants and Animals.
William A. Albrecht, Ph.D., Columbia, Mo., Calcium in the Soil for the Nutrition of Microbes, Plants and Animals.
Dr. Zolton T. Wirtschafter, Cleveland, The Importance of Minerals in Human Nutrition.
John D. Detwiler, Ph.D., London, Ont., Conservation—The Basis of Human Progress.
Dr. Jonathan Forman, Columbus, Conservation, Nutrition and Human Health.

Gov. John W. Bricker will speak Sunday afternoon on "Ohio's Conservation Program."

Physicians Refused Parking Privileges.—The city manager of Cincinnati, at a conference with Mr. Elmer E. Hunsicker, clerk of courts, and the city safety director, was so definite in his opposition to a proposal that special permits be given to physicians while on emergency calls to park their cars without being cited for violating parking regulations that the plan was abandoned. Mr. Hunsicker believed that some relief should be given to physicians who, especially during wartime, are pressed for time. He took the initiative on behalf of the medical profession and expressed his willingness to speak before the city council. At his request a member of the Academy of Medicine of Cincinnati was assigned to go with him for a preliminary conference with the city manager and the city safety director before taking it to the city council. The manager's opposition was so definite that it was decided to pursue the matter no further.

OREGON

Student Externships Resumed.—The University of Oregon Medical School, Portland, has reinstituted student externships in the curriculum of fourth year students. Hospitals where the training is being given include St. Vincent's, Good Samaritan, Emanuel, Providence, Coffey Memorial and Hahnemann, all of Portland.

Honorary Degree to Dr. Fenton.—The University of Oregon, Eugene, conferred the honorary degree of doctor of science on Dr. Ralph A. Fenton, Portland, for his work on otology, rhinology and laryngology. Dr. Fenton has been for many years a member of the Board of Trustees of the American Medical Association.

TENNESSEE

Personal.—Dr. John S. Freeman, Springfield, is now president of the Tennessee Tuberculosis Association, advancing to this position from the vice presidency, succeeding the late Dr. Horton R. Casparis, Nashville.——Dr. Asher R. McMahan, Memphis, has been appointed medical director of the Columbian Mutual Life Insurance Company to succeed Dr. James L. Andrews, Memphis, who was vice president and medical director at the time of his death on January 10.——Dr. Joseph E. Wheeler, formerly chief medical officer of the Veterans Administration Facility, Togus, Maine, has been named clinical director at the Veterans Administration Facility, Memphis, succeeding Dr. Lewis A. Walker, Memphis.——Dr. Minyard D. Ingram, Dresden, health officer of Weakley County for fourteen years, has resigned to accept a similar position in Gibson County.——Dr. Joel J. Hobson is the new editor of the *Memphis Medical Journal*, succeeding Dr. Arthur F. Cooper, who, after serving in the position since 1934, has resigned to become full time medical director of the outpatient department of the John Gaston Hospital, Memphis.

TEXAS

Greater Medical Center in Dallas.—On June 3 a dinner was held in the Baker Hotel by the Southwestern Medical Foundation to observe the establishment of the Greater Medical Center in Dallas. The project, which is not completed, represents a development financed by the foundation.

State Medical Election.—Dr. Herschel F. Connally, Waco, was named president-elect of the State Medical Association of Texas at its house of delegates meeting in Fort Worth in May and Dr. Charles S. Venable, San Antonio, was inducted into the presidency. Vice presidents are Drs. Bertus C. Ball, Fort Worth; Thomas G. Glass, Marlin, and Solon D. Coleman, Navasota. Dr. Holman Taylor, Fort Worth, is secretary and Dr. Khleber H. Beall, Fort Worth, treasurer.

Library Develops Under Celsus Society.—The San Antonio Public Library is cooperating with the Celsus Society to act as custodian of books and documents belonging to the society. The books, through the public library, will become available not only to physicians but to any one who may have an interest in medical history. The first ten volumes of the *Bulletin of Medical History* have been bound and placed on the shelves set aside for the society and it is hoped that, as the society contributes to the collection, books and manuscripts will be received from persons elsewhere. The Celsus Society was recently organized by a group of San Antonio physicians for the study of the history of medicine. The constitution specified that the organization should be informal with only one officer, president-secretary, which office is now held by Dr. Lloyd I. Ross, San Antonio. A recent meeting of the society was addressed by Knox E. Miller, medical director, U. S. Public Health Service, liaison officer, eighth service command, who gave a paper on the "Origin of the Celsus Society," and Chauncey D. Leake, Ph.D., dean and executive vice president of the University of Texas Medical Branch, Galveston, whose paper was entitled "Let's Not Forget the Great."

WASHINGTON

Dr. Westman Named Acting Health Commissioner of Seattle.—Ragnar T. Westman, surgeon, U. S. Public Health Service Reserve, on April 29 was appointed acting commissioner of health of Seattle. The appointment was made to fill the vacancy that occurred when Dr. Frank M. Carroll, Seattle, resigned after holding the position for two terms of five years each.

WISCONSIN

Changes in Health Officers.—Dr. Joseph D. Warrick has been appointed health officer of Sharon to succeed L. C. Kief, who, according to the state medical society, recently pleaded guilty to a charge of practicing chiropractic at Sharon for the past ten years without a license.——Dr. Frederick C. Haney has been named commissioner of health of Watertown, succeeding Dr. Harvey G. E. Mallow, who has been commissioned a first lieutenant in the U. S. Army Air Force.

State Public Health Appointments.—Dr. Stephen E. Gavin, Fond du Lac, has been appointed a member of the state board of health for a term expiring in 1950. The appointment of Dr. Gavin fills the last vacancy on the board. Other members include Drs. Stephen Cahana, Milwaukee; Carl W. Eberbach, Milwaukee; Albert E. Rector, Appleton; William T. Clark, Janesville; Gunnar Gundersen, La Crosse, and Ira F. Thompson, Racine. Dr. Charles A. Dawson, River Falls, a member of the state board of medical examiners since 1941, has been named secretary of the board. Dr. Gundersen was recently elected president of the state board of health and Dr. Thompson vice president.

Prize Essay Contests.—The Milwaukee Academy of Medicine announces two prizes of $100 and $50 for the two best scientific essays in any field of medicine, surgery or the allied specialties in its Horace Manchester Brown Memorial prize essay contest. The essays need not represent original investigation but must not have been previously published. There are no restrictions on subsequent publication. The contest is open to all physicians who have graduated from medical school later than June 1933 and are residing in the state of Wisconsin or are in the armed forces at the time that the essay is submitted. All essays are to be submitted to the office of the academy of medicine, 561 North 15th Street, Milwaukee, not later than December 1. They are to be submitted in triplicate and are to be double spaced. In the Rogers Memorial Prize Essay Contest, founded by the Rogers Memorial Sanitarium and sponsored by the Milwaukee Academy of Medicine, prizes of $200 and $100 for the two most meritorious studies in the fields of neurology, psychiatry and psychosomatic medicine will be offered. The contest is open to all members of the medical profession who are citizens of the state of Wisconsin whether they are actually in residence or not and to those who, not

ordinarily residents of the state, are stationed in Wisconsin in the armed forces. All papers must be submitted in triplicate and double spaced to the office of the academy of medicine not later than October 1.

GENERAL

Exposition of Chemical Industries. — The nineteenth Exposition of Chemical Industries will be held at Madison Square Garden, New York, December 6-11.

Courses in Prevention of Blindness. — The National Society for the Prevention of Blindness announces that the elementary courses for the preparation of supervisors, teachers, nurses and others concerned with the education of partially seeing children will be conducted at Wayne University, Detroit, June 21-July 30, at Michigan State Normal College, Ypsilanti, Mich., June 21-July 30, and at Teachers College, Columbia University, New York, July 6-Aug. 13. An advance course will also be carried out at Wayne University, June 21-July 30.

Awards to Women.—The American Association of University Women recently announced the following fellowship awards among others:

Dr. Yvonne Parigot de Souza, Parana, Brazil, $1,500 to study advanced obstetrics at Columbia University and observe child clinics and social welfare centers on methods of organizing for maternal and child welfare. On her return to Brazil, Dr. Parigot de Souza will set up a standard maternity center.

Elizabeth Z. Burkhart, Ph.D., Clarksville, Ark., to continue her research experiments on endocrinology at the University of Chicago.

Leah Gold, M.A., dental hygienist in the public schools of New Haven, Conn., the Marion Talbot Fellowship to conduct research in the effectiveness of specific dental hygiene methods among students of junior high school age.

Dr. David R. Lyman Awarded Trudeau Medal. — Dr. David Russell Lyman, Wallingford, Conn., was presented with the Trudeau Medal for 1943 of the National Tuberculosis Association at its annual meeting in St. Louis, May 5-6. The medal is awarded annually to one who is outstanding in the campaign against tuberculosis. Dr. Lyman is one of the founders of the association and has been continuously active on the board of directors and on numerous committees, having had at one time been president. He is currently medical superintendent of the Gaylord Farm Sanatorium at Wallingford. Dr. Frederick H. C. Heise, Trudeau, N. Y., was chosen president-elect of the association and Dr. Lewis J. Moorman, Oklahoma City, was installed as president. Dr. Charles J. Hatfield, Philadelphia, is secretary and Livingston Platt, New York, lawyer, treasurer. Daniel C. McCarthy, for a number of years director of public relations of the association, has resigned, effective June 13, to become assistant director of public relations of the Firestone Tire & Rubber Company, Akron, Ohio.

Board of Obstetrics and Gynecology.—Applications for the 1944 examinations of the American Board of Obstetrics and Gynecology are being received at the office of the secretary, Dr. Paul Titus, 1015 Highland Building, Pittsburgh. All applications for the year 1944 must be received by Dr. Titus not later than Nov. 15, 1943, ninety days in advance of the Part I examination date. Candidates are required to take both Part I and Part II examinations. The Part I examination consists of the written paper and the submission of twenty-five case history abstracts and will be conducted on Saturday, Feb. 12, 1944. This examination will be arranged so that the candidate may take it at or near his place of residence. On the successful completion of the Part I examination, candidates are eligible for the Part II examination, consisting of a pathology and an oral examination. This is given at the annual meeting of the board once each year, the time and place of which will be announced later. The Office of the Surgeon General of the U. S. Army has issued instructions that men in service eligible for board examinations be encouraged to apply and that they request orders to "detached duty" for the purpose of taking the examinations whenever possible.

Help Wanted.—A new sound film entitled "Help Wanted," presenting basic first-aid information, has just been released by the Bureau of Mines, Department of the Interior. The film is in 16 mm. sound and runs thirty minutes. Copies are now available for exhibition by industrial and civil defense training classes, training courses conducted by or on behalf of the army, navy and maritime service and by schools, churches, colleges, civic and business organizations and other similar groups. In "Help Wanted" effective use is made of animated diagrams superimposed over actual photographs to show blood circulation, pressure points for staunching the flow of blood from a wound and the effect of proper treatment of bleeding. The film also portrays typical mishaps causing bleeding wounds, shock, burns, asphyxiation, fractures and other injuries and methods of treating them. Opening scenes show the patient entering an operating room and the doctor being questioned about the accident by a news reporter. The doctor emphasizes the value of a working knowledge of first aid and proceeds to give instructions in fundamental applications. Application for free loan of "Help Wanted" should be addressed to the Graphic Services Section, Bureau of Mines, 4800 Forbes Street, Pittsburgh, and should state specifically that the borrower has a sound projector. Although no charge is made for use of the film, the exhibitor is expected to pay transportation charges both ways and for loss or damage other than normal wear.

Social Hygiene Field Representatives Appointed.—The American Social Hygiene Association is assigning field representatives in each of the nine army service commands to handle all activities in the development or expansion of a social hygiene program for these areas. The association is working closely with the army, navy, public health service and social protection section of the Office of Community War Service and all official and voluntary agencies. Four field headquarters have been established and by fall it is expected that the remaining five will be operating. The new units are:

Second Service Command (New York, New Jersey, Delaware), American Social Hygiene Association, New York.

Third Service Command (Pennsylvania, Maryland, Virginia, District of Columbia), Dr. Charles H. Miner, in charge, 603 North Charles Street, Baltimore.

Fourth Service Command (North Carolina, South Carolina, Georgia, Florida, Alabama, Tennessee, Mississippi and Louisiana), Dr. Thomas A. Storey in charge and Mrs. Edna W. Fox, assistant, Georgian Terrace Hotel, Atlanta.

Eighth Service Command (Texas, Oklahoma, New Mexico and Arizona), Bascom Johnson Jr., passed assistant surgery, U. S. P. H. S., in charge, Cliff Towers Hotel, Dallas, Texas.

The field service is under the direction of Dr. C. Walter Clarke, New York, executive director of the American Social Hygiene Association.

CANADA

Tuberculosis Survey of Newspaper Employees.—Early in May the first mass survey of the employees of a newspaper in Canada was launched by the tuberculosis prevention division of the Ontario Health Department. This first examination of newspaper employees was an effort to cooperate with the department's plans to take roentgenographic examinations of all people in the province, beginning with every one engaged in industry.

FOREIGN

Sir Frederick Hopkins Retires.—Sir Frederick Gowland Hopkins, professor of biochemistry at Cambridge University for almost thirty years, has announced his retirement, newspapers reported, April 12. Sir Frederick, who received the Nobel Prize for medicine in 1929, is noted for his research in vitamins. He is 82 years of age.

East Asiatic Medical Congress in Tokyo.—According to a short wave broadcast from Berlin, April 23, the second East Asiatic Medical Congress was held in Tokyo recently with three hundred delegates from all countries of East Asia. Participating in this congress were seventy lecturers who covered the treatment of tropical diseases, malaria and tuberculosis, the raising of the standard of living in the southern territories and the food problems in Manchuria. The congress voted to establish branch medical organizations in Burma, Malaya, East India and the Philippines. The Chinese capital city Nanking was chosen for a similar congress to be held next year.

Personal.—The Faculty of Medicine of the University of Berne has conferred the degree of doctor of pharmacy, *honoris causa*, on Arthur Stoll, Basel, Switzerland, in recognition of "his contributions to the chemistry of medicinal plants." *Science* reports that Dr. Stoll was first to describe new methods to isolate active principles of drugs heretofore available only in the form of unstable galenicals. The isolation in pure form of such principles has only widened their therapeutic application but opened entirely new indications owing to specific actions not obtainable with the crude drug (i. e., ergotamine). This is the first time that the faculty of medicine of the University of Berne has conferred this honorary degree. —— The William Julius Mickle Fellowship of the University of London has been awarded to Edward C. Dodds, D.Sc., Courtauld professor of biochemistry at the Middlesex Hospital Medical School.——Dr. George H. Macnab has been appointed dean of the Westminster Hospital Medical School, London, to succeed Sir Adolphe Abrahams, who has retired.——Sir Henry H. Dale, president of the Royal Society and director of the laboratories of the Royal Institute of Great Britain with the fullerian professorship of chemistry, has been awarded the Harben Gold Medal of the Royal Institute of Public Health and Hygiene, London, according to *Science*.

Foreign Letters

LONDON

(From Our Regular Correspondent)

May 8, 1943.

Introduction of an Appointments System for Hospital Outpatients

One of the drawbacks of treatment at the outpatient departments of hospitals is the long period of waiting, running to hours, which patients have to endure. Such loss of time is felt more severely in this war period, when there is shortage of labor of all kinds. The obvious remedy of an appointments system is now being introduced. It has existed for fifteen months for all patients, both new and old, at Guy's Hospital, which dealt with 75,000 cases in 1942. New patients or their doctor may book an appointment by personal visit, by letter or by telephone to the sister in charge of the outpatient department. Old patients at each visit book appointments for the next visit. Appointments are made in hourly blocks. Thus no patient should have to wait longer than an hour before seeing the doctor. The number of appointments per hour is much less for members of the teaching staff, so as to allow time for teaching, than it is for those made for house officers, who do not teach.

The appointment system has other advantages than the saving of the patient's time. It gives him the desirable impression that he is an individual and not merely one of a crowd. It relieves congestion in the outpatients' hall. It permits the nurse to prepare more efficiently for the management of the session. It allows alteration in the time table to be made at short notice. It renders restriction possible in the number of cases seen at any one session and therefore allows the attending physician to plan his day better.

A European Association of Clinical Pathologists to Be Formed

Among the refugees in this country from Germany are many physicians. They have found our institution of clinical pathologists worth imitating. A meeting has been held in the Medical School of University College, London, which was attended by about thirty physicians, women as well as men, drawn from Austria, Belgium, Czechoslovakia, Britain, Hungary, Italy, Poland and Russia. Dr. F. Pick of Prague called on Dr. S. C. Dyke, former president of the British Association of Clinical Pathologists, to explain how clinical pathology was organized in this country.

Dr. Dyke said that clinical pathology, though a special branch of medicine, was within itself unspecialized and had relations with all branches of clinical medicine. Owing to the relatively unspecialized nature of its proceedings, the meetings of the British Association of Clinical Pathologists formed a peculiarly happy ground for the exchange of views between practitioners of the various branches of medicine. He then moved from the chair that there be formed a European Association of Clinical Pathologists.

Prof. E. J. Bigwood of Brussels stressed the importance of establishing contacts between clinical medicine and the laboratory. Dr. M. Maizels hoped that after the war an interchange of laboratory workers between clinical pathologic laboratories in Britain and on the continent would be arranged. Dr. Dyke then read a letter from the president and council of the British association offering the hospitality of all its meetings to the members of the European association. He emphasized the need for a class of physicians capable of taking charge of hospital laboratories. He had found medical laboratory workers from the continent specialized to a degree that made it difficult for them to do this. The meeting appointed a committee consisting of Drs. B. L. Della Vida of Rome and M. Mandelbaum of Munich, F. Pick of Prague, F. Silberstein of Vienna, J. Ungar of Prague and Dr. S. C. Dyke of Oxford to draw up rules.

Heroism of a Naval Surgeon

When the Canadian corvette *Weyburn* was sunk by an underwater explosion the survivors were rescued by a destroyer. A surgeon lieutenant was standing on the destroyer's deck helping survivors from the water, when another explosion occurred and broke both his legs below the knee, with those of more than half a dozen others. He was dazed for a few minutes and then refused to be carried to a cot in the wardroom. He was carried around the deck by three men while he attended the slightly injured there. Then he ordered the men to take him to the wardroom, which was filled with men injured by the second explosion. By each cot he was placed in a sitting position on the floor. He examined the patients and gave orders for treatment to the sick bay attendant. In spite of the pain he suffered every time his legs were moved, he insisted in carrying on without rest. Only when every examination had been made did he allow himself to be placed in a chair, with his legs stretched out straight in front of him for what small measure of relief was possible. He still refused to stop work and sat in the chair for twelve hours until the destroyer reached port, directing the treatment of several men seriously wounded or burned. Doctors and attendants from a shore hospital came on board, and as the procession of stretchers began to move off the ship he called for one for himself. His heroism in attending for more than twelve hours more than 50 wounded or otherwise injured with both his legs broken has been much commended in the press. He is Surg. Lieut. P. R. C. Evans, the son of a North Wales physician, and is 25 years of age.

Scarcity of Desoxycorticosterone Acetate: Physicians Enjoined to Prescribe It Only in Addison's Disease

The Therapeutic Requirements Committee of the Medical Research Council has drawn attention to the need for strict economy in the use of desoxycorticosterone acetate. This is an essential drug for the treatment of Addison's disease, and the supplies available are sufficient only for this purpose. There is no evidence that this substance is essential for any other condition. Physicians are therefore urged not to prescribe desoxycorticosterone acetate for any patients except those suffering from Addison's disease.

Married Nurses Return to Their Profession

The shortage of nurses due to the war is so great that married nurses are returning to their profession. The National Society of Children's Nurseries in conjunction with the Royal College of Nursing and the Association of Sick Children's Hospital Nurses is holding a course in London for nurses who are eligible for the position of matron or sister in wartime nurseries. These posts are suitable for qualified nurses who are married. If they have young children, provision can be made for their care. The course of instruction is under the auspices of the Ministry of Health and is free to registered nurses who intend to take up the work in nurseries.

Experience of a Man Who Lived 130 Days on a Raft

Mr. Noel Baker, parliamentary secretary to the Ministry of War Transport, has reported the story of a Chinese seaman whose ship was torpedoed in midocean in the darkness of the night. After swimming about for some time he grabbed hold of a raft, on which he climbed. Emergency rations kept him going for sixty days. He then had become expert in catching fish and birds and rigged up an equipment to catch rain water, so that he was able to subsist until rescue on the one hundred and thirtieth day brought an end to what is described as "the most incredible experience in history."

SWITZERLAND

(From Our Regular Correspondent)

April 10, 1943.

Automatic Regulation of Blood Pressure and Arterial Hypertension

Prof. Dr. C. Heymans of Ghent, Belgium, discussed the automatic regulation of blood pressure and arterial hypertension before the Medical Society of Basel, Switzerland. Although the factors which control the blood pressure (heart minute volume, arterial air chamber, current resistance of the arterioles and circulating quantity of blood) are changeable, the level of blood pressure is to some extent constant. This is due to an automatic regulation. Pressoreceptors register the pressure at various sites in the vascular system; they conduct nervous impulses, elicited in this manner, to the central nervous system and there elicit blood pressure regulating reflexes. The most important pressoreceptors are the terminations of the depressor nerve in the left side of the heart and in the aorta and the sinus caroticus at the ramification of the internal and external carotid. Then there are pressoreceptors in the pulmonary arteries and veins, in the venae cavae and in the intestinal arteries. The reflexes which regulate the blood pressure have their points of attack on the heart, the blood vessels, the epinephrine formation of the adrenals and on the blood depots.

The function of the sinus caroticus was analyzed with the method of crossed circulation as well as by varying the pressure in the isolated sinus caroticus. If the pressure in the sinus caroticus rises, the general blood pressure decreases at once. The registration of the action currents of the depressor nerve as well as of the nerve of the sinus caroticus shows action current salvos at each systole. The significance of the intestinal arteries for the blood pressure regulation can be demonstrated likewise by means of crossed circulation, after exclusion of the sinus caroticus and of the aortic nerve. The functional significance of the terminations of the pulmonary nerves has not been experimentally demonstrated as yet. The aortic arch and the sinus caroticus react not only to pressure changes but also to chemical stimuli such as acetylcholine, nicotine, lobeline and carbon dioxide; however, the receptors for the two stimuli are not identical. Whereas the pressoreceptors are located in the vascular wall itself, the chemoreceptors are in the glomus located beside the arteries. The chemoreceptors have an important function in the reflex regulation of the respiration.

The pressoreceptors send impulses to the center not only when the blood pressure changes but continuously. If the four pressoreceptor nerves are excluded, the pressure in a comparatively short time increases to over 200 mm. of mercury and stays continuously at this elevated level (observation up to six hundred days). A neurogenic, arterial hypertension is the result. The neurogenic nature is proved by the fact that, after total sympathectomy, hypertension no longer persists.

This form of hypertension is related to essential hypertension in which the removal of parts of the sympathetic nervous system likewise has a reducing effect, but it has also connections with the kidney. According to Goldblatt's experiments, an ischemia of the kidneys resulting from clamping off of the renal arteries leads to chronic arterial hypertension.

Substitutes for Tincture of Iodine

As the result of a deficiency in raw materials, Switzerland has difficulties in supplying its population with medicines. It has been found that the use of iodine preparations and medicines which contain iodine must be greatly restricted. The available supply can be saved to a great extent by using tincture of iodine sparingly. As a disinfectant or an anti-inflammatory remedy, tincture of iodine is readily replaceable. An inquiry of the Swiss Health Office of Swiss clinics and large hospitals revealed for instance that, for the preparation of the surgical field, picric acids can be utilized in a 1, 2 or 5 per cent alcoholic solution; likewise a 2 per cent alcoholic solution of mercurochrome. Tincture of iodine has lost its significance as an anti-inflammatory remedy and painting of the skin with iodine can now be dispensed with. The Swiss Health Office arrives at the conclusion that great savings of tincture of iodine are possible without harming patients.

Brief Reports

A new periodical, *Schweizerische Zeitschrift für Psychologie und ihre Anwendungen*, has appeared recently in Switzerland. It is edited by Dr. W. Morgenthaler of Muri-Bern, Prof. Dr. J. Piaget of Geneva and Lausanne, Prof. Dr. C. G. Jung of Kuesnacht-Zurich and Dr. O. Forel of Prangins-Nyon. The periodical is published by Hans Huber of Bern.

At the suggestion of Prof. Dr. Grumbach of Zurich a Swiss Society for Microbiology has been founded, which recently held its first meeting in Lausanne. The main lecture was given by Prof. Hermann Mooser of Zurich, who spoke on the various methods of vaccination against spotted typhus. Grumbach spoke about Enterococcus.

A Swiss Paracelsus Society has been founded by research workers interested in Paracelsus. The society has the purpose to investigate the work of Paracelsus and its influence on the various branches of science (philosophy, natural sciences and medicine). The investigations are to be published under the title "Nova Acta Paracelsica." Dr. Linus Birchler, who is professor of the history of art at the Technical University in Zurich, was chosen president of the society.

The Swiss congress has granted to the International Committee of the Red Cross a contribution of three million Swiss francs, so that it can continue its activity completely unhampered. In September 1939 the first donation of two hundred thousand Swiss francs had been granted.

The Marcel Benoist-Prize for 1942 was awarded to Prof. Dr. Hermann Mooser, who is director of the Hygiene Institute of the University of Zurich. Dr. Mooser received the prize for his researches on spotted typhus. (See THE JOURNAL of Feb. 19, 1938, p. 591, for information about this prize.)

Dr. L. M. Pautrier was elected to the chair of dermatology and director of the Dermatologic Clinic of the University of Lausanne to succeed Prof. Edwin Ramel, who died recently. Pautrier was formerly director of the Dermatologic Clinic of the University of Strasbourg.

Doctor of Jurisprudence Jacques Brodbeck-Sandreuter, president of Ciba, the pharmaceutical house, was made an honorary doctor of medicine by the faculty of medicine of the University of Basel on the occasion of his sixtieth birthday. Dr. Brodbeck has done much to promote studies on the history of medicine and recently made another contribution of a hundred thousand Swiss francs for this purpose.

Marriages

EDWIN NEWTON IRONS, Chicago, to Miss Mary Elizabeth Spring of Crookston, Minn., April 27.

STANLEY F. SMAZAL, Townsend, Mont., to Miss Helen Donahue of Davenport, Iowa, May 10.

FRANCIS W. HENNINGS, Dickinson, N. D., to Miss Beth Barnes of Seattle, recently.

FRANK MERCURIO, New York, to Miss Ann Marie Rossi of Downington, Pa., May 10.

PAUL H. PERNWORTH, Venice, Ill., to Miss June Holt of Granite City, recently.

ALBERT BEHREND to Miss Elsa Lowenstein, both of Philadelphia, April 3.

Deaths

Arthur Dean Bevan ✠ Lake Forest, Ill., eminent surgeon, leader in medical education and former President of the American Medical Association, died on June 10 at his home at the age of 81 of acute myocardial failure precipitated by an acute respiratory infection.

Dr. Bevan was born in Chicago on Aug. 9, 1861. He completed his studies at the Sheffield Scientific School of Yale University in 1879. After graduating at Rush Medical College in 1883 Dr. Bevan joined the U. S. Marine Hospital Service, where he served until 1888. For one year, in 1886, he was professor of anatomy at the University of Oregon Medical School, Portland, but returned to Rush in 1887 to serve until 1889 as professor of anatomy. He was associate professor of surgery from 1889 to 1902, when he became professor of surgery. In 1907 he was made head of the department and in 1934 was named Nicholas Senn professor of surgery. Shortly after his retirement as head of the department of surgery at Rush, Dr. Bevan's portrait was presented to the college. At the time of his death Dr. Bevan was a member of the board of trustees of Rush.

Through his long association with Rush Dr. Bevan maintained a close affiliation with the Presbyterian Hospital, joining the staff in 1892 as attending surgeon and serving from 1894 until 1934 as head of the surgical service. He was consultant at the time of his death. In 1929 he, with his wife, announced a million dollar gift to the hospital for its expansion program and principally for the provision of medical services.

On March 14, 1923 Dr. Bevan performed in Presbyterian Hospital the operations in which ethylene-oxygen was first used clinically as an anesthetic. In 1931 he presented a paper before the American Medical Association entitled "Present Status of the Anesthesia Problem" in which he discussed the scheme which had been devised to prevent the possibility of static spark in the operating room. His interest in surgery evolved many procedures, including the S shaped incision for surgical operations on the liver and bile tracts and the "hockey stick" incision to expose the gallbladder without cutting through important nerves.

ARTHUR DEAN BEVAN, M.D., 1861-1943

In 1902 Dr. Bevan was appointed by President Wyeth chairman of the original committee on medical education. In 1904, when the Council on Medical Education was created, Dr. Bevan was chosen the first chairman and occupied the position until 1928. The one interruption to his work on the Council was his service as President-Elect and President of the American Medical Association in 1917-1919. In recognition of his services as President of the Association during World War I, Dr. Bevan was made an officer in the Legion of Honor of France. He was a member of the House of Delegates of the Association from 1902 to 1903 and chairman of the Section on Surgery and Anatomy in 1906-1907.

At one time he served as surgeon and major in the Oregon National Guard and director of general surgery in the surgical division of Surgeon General Gorgas's office in Washington. His surgical affiliations were many, including membership in the American Urological Association, the American Association of Anatomists and the Society of Clinical Surgery. He was a founder and a member of the first board of governors of the American College of Surgeons. He was president of the Chicago Medical Society in 1898, of the Inter-State Postgraduate Medical Association in 1931 and of the American Surgical Association in 1932. He was a member of the founders group of the American Board of Surgery and held at various times many positions in the American Society for the Control of Cancer.

Dr. Bevan's numerous contributions to the literature were not confined to his specialty. In addition to the many monographs on scientific subjects, Dr. Bevan had written many articles reflecting his early interest in medical education, the prohibition movement and other subjects.

Dr. Bevan was a man with a driving personality; a forceful character gave strength to his leadership for the advancement of medical education. His disdain of personal criticism and his fearlessness when attacked did much to promote the great success of the Council on Medical Education in achieving its objectives.

Frank B. Lane, East Orange, N. J.; Eclectic Medical Institute, Cincinnati, 1886; president of the board of health of East Orange for sixteen years; formerly chairman of the joint milk commission of the Oranges; a member of the state board of medical examiners from 1894 to 1898; consultant on the medical staff, formerly chief of staff and for many years chairman of the board of directors of St. Mary's Hospital, Orange; a member of the board of governors of the Essex County Hospital for Contagious Diseases, Belleville; aged 83; died, April 8, in the Orange Memorial Hospital of cerebral hemorrhage.

Howard Johnston Bostetter, Mount Savage, Md.; University of Maryland School of Medicine, Baltimore, 1907; member of the Medical and Chirurgical Faculty of Maryland; on the staff of the Allegany Hospital of the Sisters of Charity, Cumberland; aged 61; died, March 12, of coronary heart disease, arteriosclerosis and chronic nephritis.

James Barton Bradwell, Chicago; Hahnemann Medical College and Hospital, Chicago, 1902; aged 64; died, April 8, in the Michael Reese Hospital of hypertension and congestive heart disease.

Henry F. Bright, Alcester, S. D.; Columbian Medical College, Kansas City, Mo., 1899; aged 65; died, March 22, of coronary thrombosis.

Warren P. Brockett, Kansas City, Kan.; Kansas Medical College, Medical Department of Washburn College, Topeka, 1898; at one time secretary and treasurer of the Jackson County Medical Society; formerly a physician in the Indian Service at Mayetta; aged 72; died, April 9, of coronary occlusion.

Frank Patrick Broderick ✠ Boston; Yale University School of Medicine, New Haven, Conn., 1898; aged 67; died, February 26.

Pleasant Lewis Burgess, Bowdon, Ga.; Southern College of Medicine and Surgery, Atlanta, 1912; member of the Medical Association of Georgia; aged 60; died, March 14, of cardiovascular disease.

Charles Calerdine Crawford ✠ Cleveland; University of Wooster Medical Department, Cleveland, 1905; also a pharmacist; one of the founders and member of the staff of the Glenville Hospital, where he had been president and treasurer of the staff and president of the board of trustees; aged 62; died, April 10, at his home in University Heights, Ohio, of heart disease.

William Henry Ewing, Pittsburgh; Western Pennsylvania Medical College, Pittsburgh, 1893; member of the Medical Society of the State of Pennsylvania; at one time on the staff of the Reineman Hospital; aged 78; died, April 5, of cerebral thrombosis.

George Wallace Fennacy, Kankakee, Ill.; Bellevue Hospital Medical College, New York, 1885; aged 76; died, March 13, of coronary sclerosis.

William Rhodes Ferrell, Belle, Mo.; St. Louis College of Physicians and Surgeons, 1892; member of the Missouri State Medical Association; past president of the Gasconade-Maries-Osage Counties Medical Society; medical examiner for the draft board; aged 75; died, March 20, of heart disease.

Louis Fichter, New York; Columbia University College of Physicians and Surgeons, New York, 1904; formerly a member of the city police department and board of health; at one time on the staff of the German Hospital; aged 60; died, March 22, in Stamford, Conn., of septicemia, peritonitis and intestinal neoplasm.

John L. Freeland, Gardner, Colo.; Medical College of Ohio, Cincinnati, 1885; formerly a member of the city board of health of Indianapolis and the Indiana State Board of Health; at one time superintendent of the City Hospital, Indianapolis; aged 82; died, April 4, in Denver.

John O. Garrigus, Terre Haute, Ind.; Medical College of Indiana, Indianapolis, 1905; member of the Indiana State Medical Association; served several terms as coroner of Vigo County and at various times as deputy coroner; formerly police surgeon; aged 69; died, April 2, in the Union Hospital of paralysis agitans and arteriosclerosis.

Bernard Joseph Gretsch, New York; Columbia University College of Physicians and Surgeons, New York, 1901; member of the Medical Society of the State of New York; aged 70; died, April 2, of heart disease.

John H. Guthrie, Kress, Texas (licensed in Texas, under the Act of 1907); also a druggist; aged 67; on the staff of the Floydada (Texas) Hospital and Clinic, where he died, March 31, of cardiorenal vascular disease.

Philip Halpern, Philadelphia; Hahnemann Medical College and Hospital of Philadelphia, 1932; aged 41; died recently of gastric carcinoma with metastases.

William Hansell ✦ Ottumwa, Iowa (licensed in Iowa in 1892); an Affiliate Fellow of the American Medical Association; on the staffs of the Ottumwa and St. Joseph hospitals; aged 88; died, April 6, of uremia and chronic nephritis.

Hill Wright Howell, San Francisco; University of Nashville (Tenn.) Medical Department, 1909; member of the Medical Association of the State of Alabama; served during World War I; at one time associated with the U. S. Veterans Bureau, Birmingham, Ala.; major, medical corps, Army of the United States, not on active duty; aged 56; on the staff of the Veterans Administration Facility, where he died, March 1, of coronary thrombosis.

Howard Wakefield Jewett, Lowell, Mass.; Hahnemann Medical College and Hospital of Philadelphia, 1905; member of the Massachusetts Medical Society; aged 63; senior member of the medical staff of the Lowell General Hospital, where he died, March 18, of pyonephrosis.

William Finney Kellam, Onley, Va.; Johns Hopkins University School of Medicine, Baltimore, 1906; president and director of the Farmers' and Merchants' National Bank of Onley; a director of the Eastern Shore Public Service Company; member of the state board of fisheries; aged 62; died, March 30, of angina pectoris.

Theodore Charles Koessel, Chicago; Bennett College of Eclectic Medicine and Surgery, Chicago, 1896; member of the Illinois State Medical Society; aged 70; died, April 20, of chronic heart disease.

Henry H. W. Kruse ✦ Rockford, Iowa; Thüringische Landesuniversität Medizinische Fakultät, Jena, Thuringia, Germany, 1922; aged 52; on the staff of the Cedar Valley Hospital, Charles City, where he died, March 28, of carcinoma of the bladder.

Willis Gaylord Lewis, West Palm Beach, Fla.; Jefferson Medical College of Philadelphia, 1890; aged 83; died, March 20, following a prostatectomy.

Clinton Eber McKinnis, Seattle; University of Michigan Department of Medicine and Surgery, Ann Arbor, 1908; aged 57; died, March 23, in a local hospital of pneumonia.

George Fremont Miller ✦ Belfast, Maine; Tufts College Medical School, Boston, 1908; past president of the Waldo County Medical Society; aged 66; died, March 22, of coronary thrombosis.

William Nelson Miller, Cold Spring, N. Y.; University of the City of New York Medical Department, New York, 1895; health officer of Croton-on-Hudson for thirty-two years and school physician for twenty-two years; visiting obstetrician on the staffs of the Peekskill (N. Y.) Hospital and the Ossining (N. Y.) Hospital; for many years surgeon for the New York Central Railroad; aged 72; died, March 23, of cerebral hemorrhage.

John Patrick O'Brien, Jersey City, N. J.; Georgetown University School of Medicine, Washington, D. C., 1936; aged 35; on the staff of the Medical Center, where he died, April 2, of heart disease.

Foster Holmes Platt, Brooklyn; University of Vermont College of Medicine, Burlington, 1915; member of the Medical Society of the State of New York; on the staffs of the Prospect Heights and Adelphi hospitals; aged 50; died, April 4, of coronary thrombosis.

Robert Allen Prichard, Boerne, Texas; University of Louisville (Ky.) Medical Department, 1893; aged 78; died, March 7.

George Frederick Puffett, Alta, Iowa; State University of Iowa College of Medicine, Iowa City, 1889; aged 78; died, March 1, of senile dementia.

James F. Reynolds, Bexley, Ohio; Columbus Medical College, 1887; aged 84; died, March 25, of heart disease.

Thomas Carter Richards, Fayette, Mo.; Missouri Medical College, St. Louis, 1890; coroner of Howard County; aged 78; died, March 20, in the Veterans Administration Facility, Jefferson Barracks, of cerebral hemorrhage.

Samuel Schwartzman, New York; Cornell University Medical College, New York, 1903; aged 63; died, March 26, of heart disease.

Charles Thomas Slavin, Moravia, Iowa; Barnes Medical College, St. Louis, 1904; member of the Iowa State Medical Society; health officer; president of the school board; aged 70; died, March 31, of myocarditis.

Charles Weaver Stewart ✦ Newport, R. I.; College of Physicians and Surgeons, New York, 1891; fellow of the American College of Surgeons; chief surgeon at the Newport Hospital; a director of the Newport Trust Company; aged 77; died, March 26, of chronic myocarditis.

Amer Mills Stocking, Macomb, Ill.; College of Physicians and Surgeons of Chicago, School of Medicine of the University of Illinois, 1910; a retired minister; aged 84; died, March 31, in Bushnell of chronic myocarditis.

Elmer C. Thompson, Marked Tree, Ark.; Kansas City (Mo.) College of Medicine and Surgery, 1923; served during World War I; aged 55; died, March 20.

John Philip Throenle, St. Bernard, Ohio; Pulte Medical College, Cincinnati, 1901; aged 74; died, April 3, of coronary disease.

Theodore Toepel ✦ Atlanta, Ga.; Atlanta College of Physicians and Surgeons, 1899; past president of the Fulton County Medical Society; served as president of the Georgia League for Crippled Children; formerly director of physical training and hygiene in the public schools of Atlanta; on the staffs of the Crawford W. Long Memorial and the Grady hospitals; aged 73; died, March 12, of heart disease.

Honore D. Valin, Chicago; University of Vermont College of Medicine, Burlington, 1879; member of the Illinois State Medical Society; formerly on the staff of St. Peter (Minn.) State Hospital; aged 85; died recently at the Chicago State Hospital of hypertensive heart disease and chronic myocarditis.

Charles Layton Weitz ✦ Mount Vernon, N. Y.; New York Homeopathic Medical College and Flower Hospital, New York, 1918; served as a first lieutenant in the medical corps of the U. S. Army during World War I; aged 46; on the visiting staff of the Mount Vernon Hospital, where he died, April 13, of nitric acid poisoning, self administered.

DIED WHILE IN MILITARY SERVICE

Thomas Joseph Coonan ✦ Baltimore; University of Maryland School of Medicine and College of Physicians and Surgeons, Baltimore, 1925; major, medical reserve corps, of the U. S. Army; aged 41; died, Nov. 3, 1942, of meningitis.

Guy B. McArthur ✦ Medical Director, Captain, U. S. Navy, Coco Solo, Canal Zone; Washington University School of Medicine, St. Louis, 1917; entered the medical corps of the U. S. Navy Sept. 6, 1917; medical officer in command of the U. S. Naval Hospital; aged 52; died, March 18, near the U. S. Naval Air Station, Miami, Fla., as the result of an automobile accident.

Harvey Wave Miller ✦ Medical Inspector, Commander, U. S. Navy, Portland, Ind.; Indiana University School of Medicine, Indianapolis, 1912; entered the medical corps of the U. S. Navy on July 5, 1921; served during World War I; aged 59; died, March 19, in the U. S. Naval Hospital, Corona, Calif., of coronary thrombosis while en route to a new assignment.

Correspondence

TYPHOID SHOCK THERAPY IN RENAL DISEASE

To the Editor:—In the March 6 issue of THE JOURNAL, Taylor and Page report on the use of typhoid shock therapy in 2 cases of renal disease, malignant hypertension and the nephrotic phase of chronic glomerulonephritis. From their results they conclude that this method of therapy is quite dangerous because of the evidence of severe renal irritation.

From their protocols one might possibly draw somewhat different conclusions. The doses of triple typhoid vaccine used in the case of malignant hypertension appear to be somewhat too high for a first dose. The use of a second dose so soon after the first (which had already produced signs of renal irritation) complicates any conclusions one might draw. The second case is approached more cautiously and might be termed a minor triumph for shock therapy. Six intravenous injections of intravenous typhoid vaccine cured a case of chronic nephritis of over five months' standing. Hematuria and a low urea clearance do not seem to be excessive risks for such results.

During the past few years I have treated a number of seemingly hopeless cases of renal disease with typhoid shock therapy (chronic glomerulonephritis with and without edema or uremia, periarteritis nodosa, active glomerulonephritis associated with pyoderma and malignant hypertension). The results in some instances were gratifying. I have used the infusion method of administering this pyrogenic agent in an attempt to minimize the risk and prolong the fever.

The urinary changes noted by Taylor and Page are possibly similar to exacerbation of a focal infection when the causal mechanism is tapped. In other chronic infections, such as arthritis, this is considered to be an encouraging sign. Renal irritation occurring with cautiously administered typhoid shock therapy might also fall into this category. One hesitates to condemn a technic which offers the hope of brilliant results in what are otherwise hopeless cases.

HARRY A. SOLOMON, M.D., New York.

TETANUS IN THE MIDDLE EAST

To the Editor:—The editorial comment "Tetanus in the Middle East" (THE JOURNAL, April 3, p. 1157) cites the experience with this disease in a section of the British army. Because of the finding that 5 patients who had received tetanus toxoid subsequently developed tetanus, the article affirms the impression of the British workers stating that "From these figures active immunization, while effective in preventing tetanus, apparently has definite limitations." This statement is, of course, entirely true and needs no confirmation. But, as it is stated, the statement may result in misunderstanding.

In the first place, no one familiar with immunologic processes expects 100 per cent protection following an immunization procedure. The biologic individuality of human beings (like other animals) is such that occasional subjects will fail to respond to any given immunization procedure, as has been well established in many studies covering various types of immunization. This property is, of course, not peculiar to immunization or to the animal kingdom for that matter—"duds" occur among bombs, automobile tires, vegetable seeds or what you will. Consequently, no surprise or change in point of view should be occasioned by learning that a few cases of tetanus occur among the soldiers in the British or any other army.

Secondly, the results reported by the British authorities must be differentiated from those which may be expected in the United States Army, since the immunization procedures are different in the two armies (London Letter, *ibid.*, April 17). Of the 5 cases of tetanus mentioned, 1 was incompletely reported, in 3 there were only two initial immunizing doses of tetanus toxoid, and only in 1 was a subsequent booster dose of toxoid given as well as the initial doses. In the American army the official procedure (Circular Letter 34, S. G. O.; Long, A. P.: Tetanus Toxoid: Its Use in the United States Army, *Am. J. Pub. Health* **33**:53 [Jan.] 1943) is to give two initial doses of fluid toxoid three weeks part, a stimulating dose one year later or on departure for a theater of operations, and an emergency stimulating dose on the occurrence of wounds, severe burns or other circumstances in which the danger of tetanus is a possibility. This American procedure can be expected to give a higher percentage of protection than the earlier British procedure on which the results referred to were based.

GEOFFREY EDSALL, M.D., Boston.

COUNTY SOCIETY PROPOSES CASH SUBSIDY FOR FAMILIES OF SERVICE MEN

To the Editor:—The council of the Wayne County Medical Society announces its course of action relative to the program of maternal and pediatric care for wives and infants of enlisted men projected by the government under H. R. 1975 and proposed to be administered by the state department of health.

The council believes that all the families of men in military service requiring assistance for any of the necessities of life should receive a direct contribution from the federal government and that the money thus appropriated should be paid directly to those for whom it was intended, namely the wives and children of men in the armed forces.

The council believes that the proposed plan under H. R. 1975 is inadequate in its scope because it is restricted to one particular condition in the mother and to the care of children up to only 1 year of age; furthermore, that it should not be administered by the state health department because among other things the service should be handled uniformly by an authority that functions actively in every county of Michigan, and in many counties there are no health departments.

The council suggests that the program can be administered most readily and without overlapping personnel and new "red tape" either by the army through the established procedures of paying dependency allowances or through the functioning Army Emergency Relief organization. Simplified procedures and essential records to a great extent already exist in these organizations and assistance is paid directly in the form of cash benefits to those for whom it is intended. Contact so far with personnel of the Army Emergency Relief organization shows that it is favorable to the idea and can function as stated. From the standpoint of the mother, this system would be preferred because she already understands it, to say nothing of time and effort saved and the fact that she is not classified as an indigent nor is the implication given as in the present proposal that she cannot be trusted with the cash benefit.

If the foregoing is impossible at present, the council calls attention to the already existing facilities in Michigan that administer medical and hospital assistance; namely, the State Social Aid and Welfare Commission, the Michigan Crippled Children Commission and the American Red Cross.

The council objects to the intrusion of federal politics and federal domination in the field of curative medicine through the use of the state department of health, the concern of which should be solely in the field of preventive medicine.

Report of this action is being sent to the governor and the members of the state administrative board, to the American Medical Association, to all county medical societies in the state of Michigan and to the National Physicians' Committee.

WYMAN D. BARRETT, M.D., Detroit.
President, Wayne County Medical Society.

Medical Examinations and Licensure

COMING EXAMINATIONS AND MEETINGS

BOARDS OF MEDICAL EXAMINERS

BOARDS OF EXAMINERS IN THE BASIC SCIENCES

Examinations of boards of medical examiners and boards of examiners in the basic sciences were published in THE JOURNAL, June 12, page 463.

NATIONAL BOARD OF MEDICAL EXAMINERS

NATIONAL BOARD OF MEDICAL EXAMINERS: *Parts I and II.* August 2-4. *Part III.* June and also at different times at various centers having 5 or more eligible applicants. Sec., Dr. J. S. Rodman, 225 S. 15th St., Philadelphia.

EXAMINING BOARDS IN SPECIALTIES

AMERICAN BOARD OF DERMATOLOGY AND SYPHILOLOGY: *Written.* Various centers, Sept. 27. *Oral.* Philadelphia, Nov. 5-6. Final date for filing application is August 16. Sec., Dr. C. Guy Lane, 416 Marlboro St., Boston.

AMERICAN BOARD OF INTERNAL MEDICINE: *Oral.* Chicago, June 9-11. *Written.* Oct. 18. Final date for filing application is Sept. 1. Asst. Sec., Dr. William A. Werrell, 1301 University Ave., Madison, Wis.

AMERICAN BOARD OF ORTHOPAEDIC SURGERY: *Part I.* New Orleans, Oct. 8-9. New York, Oct. 15-16. Chicago, Oct. 22-23. San Francisco, Oct. 29-30. Final date for filing application is Aug. 10. Sec., Guy A. Caldwell, 3503 Prytania St., New Orleans, Louisiana.

AMERICAN BOARD OF OTOLARYNGOLOGY: *Oral.* Chicago, October. Final date for filing application is July 1. Sec., Dr. Dean M. Lierle, 1500 Medical Arts Bldg., Omaha, Neb.

AMERICAN BOARD OF PEDIATRICS: *Written.* Locally, Oct. 8. *Oral.* New York City, Nov. 20-21, and Cincinnati, Dec. 11. Final date for filing applications is Aug. 10. Starting July 1, 1943, Group I will be abolished. Sec., Dr. C. A. Aldrich, 707 Fullerton Ave., Chicago.

AMERICAN BOARD OF PSYCHIATRY AND NEUROLOGY: *Written.* Locally, Oct. 30. *Oral.* Locally, Dec. 20-21. Final date for filing application is Sept. 30. Sec., Dr. Walter Freeman, 1028 Connecticut Ave. N.W., Washington, D. C.

AMERICAN BOARD OF SURGERY: *Written. Part I.* Oct. 7. Final date for filing application is Aug. 1. Sec., Dr. J. S. Rodman, 225 S. 15th St., Philadelphia.

AMERICAN BOARD OF UROLOGY: *Oral.* Chicago, February. *Written.* Various centers, December. Final date for filing application is Nov. 1. Sec., Dr. Gilbert J. Thomas, 1409 Willow St., Minneapolis, Minn.

Bureau of Legal Medicine and Legislation

MEDICOLEGAL ABSTRACTS

Medical Practice Acts: Application of Colored Lights as the Practice of Medicine.—Dinshah P. Ghadiali developed "Spectro-Chrome-Metry" as "an original science" by the application of which, according to his claims, while he "does not cure or attempt to cure disease," he can " 'tonate the imbalance' of the human body by attuned color waves supplied by an appliance called a 'Spectro-Chrome,' " for which he has obtained a United States patent. The specification filed in the United States Patent Office for that invention stated that the invention "relates to a color wave projection apparatus intended primarily for use in the treatment of diseases by means of color waves emanating from selected portions of the spectrum." Any "imbalance," so Ghadiali claimed, "can be 'tonated' by the proper use of the Spectro-Chrome." Ghadiali wrote a so-called "Spectro-Chrome-Metry Encyclopaedia," which discusses treatments for "most major diseases." These cures, Ghadiali claimed, are effected by exposure of the affected part of the body to colored lights emanating from the Spectro-Chrome.

It was Ghadiali's practice, affixing in advertising circulars after his name the title "(Honorary) M.D. . . . Metaphysician and Psychologist," to conduct an itinerant series of courses in the alleged "original science" he had developed. So-called pupils would enroll, according to the forms they signed, "for the study of Spectro-Chrome-Metry, The Science of Automatic Precision, the Measurement and Restoration of the Human Radio-Active and Radio-Emanative Equilibrium (Tonation of Imbalance) by Attuned Color Waves, without the use of Diagnosis, Drugs, Manipulation or Surgery." There was evidence that some, if not most, of the "students" enrolled with the thought that their personal diseases and ailments would be "benefited" by the course. During the course each student would be given a Spectro-Chrome and a copy of the encyclopedia written by Ghadiali. As a result of conducting one of these courses in Delaware, Ghadiali was prosecuted for violating the medical practice act of Delaware in that without having a license to practice medicine and surgery he (1) recommended the use of an appliance for the cure, relief or palliation of ailment or disease of mind or body and (2) used the letters M.D. in connection with his name, implying or designating him as a practitioner of medicine. He was found guilty and the conviction was affirmed by the Supreme Court of Delaware in an unreported opinion. A writ of certiorari was denied by the Supreme Court of the United States. *Ghadiali v. Delaware*, 292 U.S. 653, 54 S. Ct. 864, 78 L. Ed. 1502. Subsequently, without the aid of an attorney, he instituted an action in the federal district court, district of Delaware, to enjoin the Delaware state medical society, the attorney general of the state and other defendants from preventing him from lecturing on the subject of the alleged science he developed, which restraint, so he alleged, interfered with his constitutional rights as an American citizen.

Ghadiali did not point out any particular article of the United States Constitution on which he relied, aside from the provisions of the constitution authorizing the Congress to enact laws relating to the patenting of inventions. The court concluded, therefore, that he based his case in chief on the provisions of the fourteenth amendment relating to the right of freedom of speech. He attacked the Delaware medical practice act as unconstitutional, asserting in effect that he has the right to say what he pleases. He contended that what he had done and what he intended to do in the state of Delaware did not constitute the practice of medicine. The rights conferred by the constitution, answered the court, are not absolute and the right of freedom of speech must be so governed as to insure orderly and healthful living. The police power is reserved explicitly to the states by the tenth amendment. The health of the citizens of a state is a proper subject for the exercise of that power, and a state may license the practice of medicine within its borders in aid of public health. A state may define what constitutes the practice of medicine, and the provisions of the Delaware medical practice act defining the practice of medicine are reasonable and present no substantial questions of constitutionality.

The next question, then, said the court, is Has the state of Delaware applied the medical practice act arbitrarily to Ghadiali? He is not a physician or a surgeon. He claims that he does not hold himself out as a physician. He contends that he does not diagnose illnesses, cure sickness or treat ill persons but that he merely sells his patented appliance, the Spectro-Chrome, and therefore is not engaged in the practice of medicine. Nevertheless, he claims that the Spectro-Chrome can "tonate" the "imbalance" of the body; that is to say, in medical phraseology, that the Spectro-Chrome applied in accordance with his teachings will cure disease. Thus, although Ghadiali claims to be a mere purveyor of machines, he in effect prescribes methods of treatment for disease. It is immaterial that he disdains the conventional words "disease" and "cure" and that he disavows the profession of a physician though making use of the words "(Honorary) M.D." after his name. He offers Spectro-Chrome-Metry as a substitute for medicine for the cure of disease. Since he was not licensed by the state of Delaware, he was acting in violation of the statute prohibiting the practice of medicine without a license, and his prosecution and conviction did not deprive him of his right of freedom of speech without due process of law.

The court accordingly dismissed the proceedings, in effect, leaving the law enforcement officials of Delaware free to proceed against Ghadiali if he continues his activities in the state. —*Ghadiali v. Delaware State Medical Society, 48 F. Supp. 789 (1943).*

Society Proceedings

COMING MEETINGS

Montana, Medical Association of, Billings, July 7-8. Dr. Thomas F. Walker, 206 Medical Arts Building, Great Falls, Secretary.

Current Medical Literature

AMERICAN

The Association library lends periodicals to members of the Association and to individual subscribers in continental United States and Canada for a period of three days. Three journals may be borrowed at a time. Periodicals are available from 1932 to date. Requests for issues of earlier date cannot be filled. Requests should be accompanied by stamps to cover postage (6 cents if one and 18 cents if three periodicals are requested). Periodicals published by the American Medical Association are not available for lending but can be supplied on purchase order. Reprints as a rule are the property of authors and can be obtained for permanent possession only from them.

Titles marked with an asterisk (*) are abstracted below.

American Heart Journal, St. Louis

25:145-284 (Feb.) 1943

Heart Disease in the Argentine. P. Cossio, Buenos Aires, Argentina. —p. 145.
*Patency of Ductus Arteriosus in Adults. A. Keys and M. J. Shapiro, Minneapolis.—p. 158.
*Results of Surgical Treatment of Patency of Ductus Arteriosus Complicated by Subacute Bacterial Endarteritis. A. S. W. Touroff, New York.—p. 187.
Physiologic Definition of Acute Congestive Heart Muscle Failure. G. Fahr and M. S. Buehler, Minneapolis.—p. 211.
Hemiplegia Following Bradycardia and Cardiac Standstill. A. T. Steegmann, Kansas City, Mo., and H. Feil, Cleveland.—p. 244.

Patency of Ductus Arteriosus in Adults.—There exist records of 134 patients who have had operations for ligation of the duct; nearly half of these have not been reported except by personal correspondence to Keys and Shapiro. Patency of the ductus arteriosus is apparently much more common than was previously believed. The authors themselves have studied 51 such patients in the Minneapolis and St. Paul area. Brief notes are given on 57 adults with postmortem examinations who had simple, typical patency of the ductus arteriosus, a few data on 10 adults with atypical patency of the duct and 4 case reports of adults with postmortem examinations who had simple patency of the duct. In simple patency the cause of death was subacute bacterial endarteritis in more than 40 per cent; 28 per cent died of congestive failure. The death of 2 patients resulted from rupture of a pulmonary aneurysm. After the age of 17, patency of the ductus arteriosus was associated with an average reduction of life expectancy of about twenty-five years. While life lasts it is fairly normal. Right and left sided cardiac hypertrophy occurs but there is no enlargement in at least 10 per cent, pulmonary aneurysms are present in about 15 per cent, atheromas and calcareous plaques occur frequently and the aorta is involved almost as often as the pulmonary artery. The ductus was usually short, and in some it was represented by a fistula-like communication between the aorta and the pulmonary artery. Difficult or even inoperable conditions occurred in about 17 per cent. The aortic orifice was usually larger than the pulmonary orifice. Among adults with simple patency of the ductus women represent about three fourths of the cases. In atypical patency this sex ratio seems to be reversed. Analysis of the available data indicates that an attempt at ligation of the ductus is justifiable in spite of the absence of signs of decreasing adjustment to the defect. In adults difficult or impossible operative conditions will be frequent.

Patency of Ductus Arteriosus Complicated by Subacute Endarteritis.—During the two and a half years following January 1940 Touroff has surgically treated 11 patients with subacute bacterial endarteritis involving a patent ductus arteriosus. Although not all the patients were cured, the value of surgical intervention in properly selected cases was established. The ages of the 11 patients ranged between 9 and 63 years; 8 were women. In 10 the onset of clinical manifestations of infection and the time of operation varied between thirty-one (+) days and five months; in 1 the infection was present for two years prior to operation. Spontaneous pulmonary embolism prior to operation occurred in 5 patients. In 10 chemotherapy prior to operation was without significant effect. At the time of operation the blood cultures of all patients were positive for Streptococcus viridans. The characteristic "machinery" murmur of patent ductus arteriosus was present in all: several had additional soft systolic murmurs (at the apex or base) which were considered to be of little significance; in 2 characteristic murmurs led to the additional preoperative diagnosis of secondary, vegetative valvular involvement. Nine patients survived the operation and 2 died of operative hemorrhage. Of the survivors, 6 recovered from infection without benefit of chemotherapy and 3 did not recover from infection despite chemotherapy. Of the 6 who recovered, none presented evidence of preoperative spread of vegetations and after three to twenty-nine months all are well and their blood cultures have been repeatedly negative. Of the 3 who failed to recover, 2 had evidence of vegetative valvular lesions prior to operation and 1 was assumed to have vegetations at the aortic end of the ductus. One of these 3 patients died of subacute Streptococcus viridans endarteritis eight months after operation and 2 are unimproved fourteen and sixteen weeks, respectively, after operation. Ligation or division of the ductus, if performed before vegetations have spread to the cardiac valves or aorta, is an effective and safe method of treating subacute Streptococcus viridans endarteritis involving a patent ductus arteriosus. The operation should be done as soon as the diagnosis of superimposed infection is established. A patient with an acutely infected (Staphylococcus aureus) patent ductus arteriosus has been operated on successfully.

25:285-428 (March) 1943

William Withering—A Bicentenary Tribute. G. Nylin, Stockholm, Sweden.—p. 285.
*Angiocardiography and Its Value. R. Perez de los Reyes, A. Castellanos and R. Pereiras, Havana, Cuba.—p. 298.
Serologic Reaction in Cardiovascular Syphilis. W. Beckh, San Francisco.—p. 307.
Apparent Causal Mechanism of Primary Thrombosis of Axillary and Subclavian Veins. J. J. Sampson, San Francisco.—p. 313.
Rate of Peripheral Blood Flow in Presence of Edema. D. I. Abramson, S. M. Fierst and K. Flachs, Cincinnati.—p. 328.
*Investigations Concerning Vital Capacity. D. Gross, Santiago, Chile. —p. 335.
*Effect of Intravenous Administration of Lanatoside C on Output, Diastolic Volume and Mechanical Efficiency of the Failing Human Heart. J. S. La Due, New Orleans, and G. Fahr, Minneapolis. —p. 344.
Thrombosis of Subclavian and Axillary Veins: Report of 46 Cases. J. R. Veal and H. H. Hussey, Washington, D. C.—p. 355.
Electrocardiogram in Hyperventilation Syndrome. W. P. Thompson, Los Angeles.—p. 372.

Angiocardiography.—Perez de los Reyes and his associates have employed angiocardiography routinely since 1937 in the examination of cardiac patients. It has proved harmless and its diagnostic value is superior to that of other methods. Angiocardiography utilizes the peripheral veins for visualizing the cavities of the human heart and their large communicating blood vessels. The method was devised with a view of establishing a correct diagnosis of congenital heart disease. Its two main stages consist in the introduction of a thin Lindeman trocar in a vein of the elbow, hand, leg or thigh and the injection of a radiopaque substance (not sodium iodide in a living subject) and exposure of the x-ray film at the end of the injection. From birth until the age of 6 months a 35 per cent solution of a radiopaque substance is used; from 6 months until 2 or 3 years of age the same solution may be used in noncyanotic patients, but in the presence of cyanosis the best concentration is 50 per cent. Injection of the substance must be completed as rapidly as possible and the roentgenogram made while the syringe still contains 2 or 3 cc. of the original 8 to 10 cc. of solution for a newborn infant, 12 to 20 cc. for an infant and 15 to 30 cc. for older children. The technic is easy and can be done wherever roentgenographic equipment is available.

Vital Capacity.—Gross describes a new spirometric procedure of investigating the respiratory function; it adds to the factor of volume the factors of time and pressure. By measuring at the same time as the vital capacity the minimal duration of the quickest possible exhalation of a volume equal to the vital capacity, the velocity of spirometric respiration is obtained by dividing the vital capacity by the expiration time. The velocity of spirometric respiration is that air volume which enters the spirometer per second. It represents the average of

the quickest possible expiration. Furthermore, the maximal expiratory pressure is measured; this corresponds to the respiratory movement and is, in a sense, identical with the vital capacity. The vital capacity (volume) and the expiratory pressure are independent of each other, whereas the velocity of spirometric respiration depends on the vital capacity as well as on the expiratory pressure. Any decrease in vital capacity that is caused predominantly by heart disease is characterized by prolongation of the expiration time, by decrease in the velocity of spirometric expiration and, above all, by decreased expiratory pressure, which in typical cases sinks below half the standard value. Decreases in vital capacity that are caused primarily by pulmonary disease are characterized by prolonged expiration time, by decreased velocity of respiration and, most of all, by normal or hardly altered expiratory pressure. The decrease in expiratory pressure in cardiac insufficiency is explained by a diminution in the strength of the respiratory muscular apparatus. The fact that a person has a normal vital capacity does not prove that he has a normal respiratory function. Other factors, such as time, velocity and expiratory pressure, must be considered.

Effect of Lanatoside C on Failing Heart.—According to La Due and Fahr the intravenous administration of lanatoside C to patients with heart failure and normal sinus rhythm usually increased the pulse pressure and reduced the circulation time and venous pressure within two hours. Roentgenkymographic studies of the hearts of 10 such patients showed that the drug significantly reduced the diastolic heart volume of 5 and increased the stroke output of 8. In 2 patients the minute volume of the heart was so great before the administration of the drug that no decided increase could be expected. In the 8 patients in whom the cardiac output, the product of the stroke output and the mean blood pressure was definitely increased, the diastolic heart volume was decreased or unchanged. Since the diastolic heart volume is an index of oxygen consumption, these increases in work which followed lanatoside C must have represented proportional improvement in the mechanical efficiency of the heart of 8 of the 10 patients. Seven patients who were studied after compensation was established showed a decrease of 200 cc. or more in the diastolic heart volume. In 4 the minute volume was greater than at the start of the experiment and in 3 it was less. The most consistent and lasting change produced seemed to be a decrease in the diastolic volume of oxygen consumption.

American J. Digestive Diseases, Fort Wayne, Ind.

10:45-80 (Feb.) 1943

Clinical Experiments with Riboflavin, Inositol and Calcium Pantothenate. M. G. Vorhaus, M. L. Gompertz and A. Feder, New York.—p. 45.

Oral Use of Amino Acids of Hydrolyzed Casein (Amigen) in Surgical Patients. R. Elman, St. Louis.—p. 48.

Relationship Between Roentgenographic Abnormalities of Gallbladder and Constipation. G. H. Laing, J. M. Beazell and A. C. Ivy, Chicago. —p. 50.

Giardiasis with Unusual Clinical Findings: Preliminary Report. P. B. Welch, Miami, Fla.—p. 52.

*Chemotherapy of Chronic Ulcerative Colitis. M. A. Mills and T. T. Mackie, New York.—p. 55.

Significance of Hemorrhagic or Pigment Spots as Observed by Gastroscopy. J. M. Ruffin and I. W. Brown Jr., Durham, N. C.—p. 60.

Generalized Pruritus Due to Carcinoma of Stomach and Cured by Gastrectomy. L. Cardon, Chicago.—p. 63.

Thiamine Influence on Laxative Action. S. Loewe, Ida Loewe and R. Knox Jr., New York.—p. 65.

Liver Function Tests in the Aged: (Serum Cholesterol Partition, Bromsulphalein, Cephalin Flocculation and Oral and Intravenous Hippuric Acid Tests.) H. A. Rafsky and B. Newman, New York.

Duodenal Tube Biliary Tract Drainage: Twenty-Five Year "Follow Up" Report on Anna Ingeber Penn, the First Person to Undergo Treatment by This Method. B. B. V. Lyon, Philadelphia.—p. 69.

Chemotherapy of Chronic Ulcerative Colitis.—Sulfathiazole, sulfaguanidine and sulfadiazine were used by Mills and Mackie in the treatment of 109 unselected cases of acute and fulminating to chronic ulcerative colitis from the colitis clinic of the Roosevelt Hospital. Thirty-six patients were treated with only one drug. Sulfathiazole employed in 59 proved most effective in acute cases. Of the 59 patients with the disease in the acute, active, chronic, recurrent and convalescent stages treated with sulfathiazole 23 were decidedly, 23 definitely and 8 were not improved; 5 were intolerant to the drug. The doses employed included 6 Gm. divided into six equal doses for several days; this was reduced to 4 Gm. in twenty-four hours. The average total dose administered was 40 Gm. per patient. The respective figures for the 71 treated with sulfadiazine were 35, 21, 9 and 6, and for the 91 given sulfaguanidine they were 41, 34, 11 and 5. The present status of the 109 patients is as follows: 15 have been in a sustained remission of the disease for six months to two years, in 35 the disease process is quiescent both on proctoscopic examination and symptomatically but these patients are still on active therapy, 25 are on active therapy with continuing improvement in their disease, 17 are unimproved, 7 have had ileostomies, 4 are dead and the present status of 6 is unknown. The better results occurred in patients without severe and irreversible pathologic changes in the colon.

American Journal of Medical Sciences, Philadelphia

205:157-312 (Feb.) 1943

Tissue Culture Studies on Cytotoxicity of Bactericidal Agents: I. Effects of Gramicidin, Tyrocidine and Penicillin on Cultures of Mammalian Lymph Node. W. E. Herrell and Dorothy Heilman, Rochester, Minn.—p. 157.

*Ornithosis (Psittacosis): Report of 3 Cases and Historical, Clinical and Laboratory Comparison with Human Atypical (Virus) Pneumonia. C. B. Favour, Boston.—p. 162.

Absorption Rate from Bone Marrow. L. M. Meyer and M. Perlmutter, Brooklyn.—p. 187.

Use of Ouabain in Rapid Cardiac Arrhythmias. W. I. Gefter and W. G. Leaman Jr., Philadelphia.—p. 190.

*Comparative Value of High and Low Doses of Sulfadiazine in Treatment of Pneumococcic Pneumonia. H. F. Dowling, C. R. Hartman, Washington, D. C.; H. A. Feldman, Fort McPherson, Ga., and F. A. Jenkins, Fort George G. Meade, Md.—p. 197.

Vasodilating Effects of Nicotinic Acid (Relation to Metabolic Rate and Body Temperature). Grace A. Goldsmith and Shirley Cordill, New Orleans.—p. 204.

Relationship of Niacin (Nicotinic Acid) to Porphyrinuria in the Aged. H. A. Rafsky and B. Newman, New York.—p. 209.

*Studies of B Vitamins in Human Subject: VI. Failure of Riboflavin Therapy in Patients with Accepted Picture of Riboflavin Deficiency. T. E. Machella and P. R. McDonald, Philadelphia.—p. 214.

Relative Absorption and Conjugation of Nine Compounds by Humans During Three Hour Period: (Free and Conjugated Blood Level Determinations During Three Hour Period Following Peroral Administration of Acid Salts Alone, Acid Salts with Sodium Bicarbonate and Sodium Salts of Sulfapyridine, Sulfathiazole and Sulfadiazine). E. H. Loughlin, R. H. Bennett, Mary E. Flanagan and S. H. Spitz, Brooklyn.—p. 223.

Occurrence of Abnormal Capillary Fragility in Newborn. W. C. Moloney, Boston.—p. 229.

*Bilateral Partial Bundle Branch Block. S. Strauss and R. Langendorf, Chicago.—p. 233.

Predictability of Character (Increased or Normal) of Erythrocyte Sedimentation Rate: Survey of 1,000 Cases. J. D. Helm Jr., Philadelphia.—p. 241.

Thrombocytopenic Purpura Caused by Sulfonamide Drugs: Report of 3 Cases. L. W. Gorham, S. Propp, J. L. Schwind and D. R. Climenko, Albany, N. Y.—p. 246.

Effect of Storage at Various Temperatures on Prothrombin Clotting Time of Human Plasma. R. C. Page and E. J. de Beer, New York.—p. 257.

Ornithosis (Psittacosis).—Favour has encountered 1 mild, 1 severe and 1 extremely severe case which he has been able to identify as probable ornithosis (psittacosis) by the complement fixation test. Other cases with parallel clinical courses, but not due to the virus of ornithosis, suggested close similarities between ornithosis and atypical pneumonia. The 3 cases of ornithosis were observed in the course of eighteen months. Careful questioning of patients with atypical pneumonia about contact with varieties of birds known to harbor the virus and complement fixation tests on acute and convalescent serums should be performed as a diagnostic routine. Atypical pneumonia in patients from whom no etiologic agents have been isolated may be due to a virus of the psittacosis group which has become fixed and is usually incapable of heterogeneous parasitism. The cases presented are of further interest because a number of animal inoculations did not differentiate ornithotic pneumonia from the human type of virus pneumonia. If the assistance of Dr. K. F. Meyer's laboratory, where the psittacosis complement fixations were done, had not been obtained the cases might have been regarded as human virus pneumonia and the fact would have been missed that ornithosis is probably much

more common than is suspected. The history of contact with birds was always obtained from the patient; the history was sought chiefly because the hospital staff had been awakened to the ornithosis problem by a visit from Dr. Meyer.

High and Low Doses of Sulfadiazine.—Eighty-one unselected adults with typed pneumococcic pneumonia were treated by Dowling and his colleagues with an initial dose of 2 Gm. of sulfadiazine followed by 0.5 Gm. every four hours until recovery was certain or death ensued and an alternate group of 79 with 6 Gm. initially followed by 1 Gm. every four hours. There was no significant difference in mortality or in the incidence of serious complications in the two groups. In the second group there was a slight tendency for the temperature to fall more rapidly than in the low dose group. The hospital stay for the patients receiving the larger doses averaged three and two-fifths days less than for the low dose group and the incidence of relapse, spread of the pneumonia to another lobe and slow resolution in the high dose group was less than half that in the low dose group. Toxic reactions were infrequent in both groups. Although the higher doses appear slightly more effective, definitely smaller doses than are usually recommended can be used without fear of an increase in the mortality rate or of serious complications. At present this is significant, as the supply of the sulfonamides may become limited.

Studies of B Vitamins in Man.—The experience of Machella and McDonald in the treatment with riboflavin of some of the lesions of 20 patients attributed to its deficiency has been as follows: Cheilosis has not healed with the administration of riboflavin alone, but from the observation of others it has become evident that the administration of fractions of the B complex other than riboflavin may be accompanied by healing of the lesion. They have had no significant experience in the treatment of the lesions of the face that have been ascribed to a deficiency of riboflavin. Its administration to 3 patients with acute and to 1 with chronic pemphigus brought about no improvement in the character or decrease in the number of the lesions. The results of treating keratitis of 9 patients with riboflavin were disappointing; only 1 of them experienced permanent subjective improvement. The cutaneous rosacea of 5 patients with rosacea keratitis was uninfluenced by the vitamin. In none of the 6 patients with a purple-red or magenta tongue and with flattened or mushroom shaped filiform papillas who were treated with riboflavin were the changes of the tongue significantly altered by the vitamin; in 4 a return to normal occurred after medication with brewers' yeast, in 1 after pyridoxine was administered and in 1 the opportunity to observe the results of vitamin therapy other than riboflavin was not afforded. The conflicting data in the literature and their personal experience make the authors doubt the validity of the syndrome ariboflavinosis.

Bilateral Partial Bundle Branch Block.—Strauss and Langendorf report a case of sinus rhythm with intraventricular block which showed variations of the ventricular complexes between the common and uncommon types. This change was associated with advanced partial auriculoventricular block. The alternations are explained by assuming partial block in the two main bundle branch systems with a shorter relative refractory phase of the bundle branch which has the longer absolute refractory phase. When a thorough examination of the conduction system in cases of intraventricular block is made, bilateral involvement might become more frequent than heretofore expected.

Archives of Dermatology and Syphilology, Chicago

47:301-466 (March) 1943

Lipid Proteinosis (Urbach-Wiethe). J. Ramos e Silva, Rio de Janeiro, Brazil.—p. 301.
Unusual Variant of Epidermolysis Bullosa: Recurrent Bullous Eruption of Feet. S. B. Frank.—p. 327.
Mineral Changes in Neurodermatitis Revealed by Microincineration. R. C. MacCardle, M. F. Engman Jr. and M. F. Engman Sr., St. Louis.—p. 335.
Multiple Basal Cell Epitheliomas Originating from Congenital Pigmented Basal Cell Nevi. T. W. Nisbet, Pasadena, Calif.—p. 373.
Acrosclerosis. P. A. O'Leary, Rochester, Minn., and M. Waisman, Chicago.—p. 382.
Keratosis Follicularis with Unusual Involvement of Scalp: Report of Case. D. G. Welton, Charlotte, N. C.—p. 398.

Archives of Internal Medicine, Chicago

71:301-442 (March) 1943

Angina Pectoris and Syndrome of Peptic Ulcer. H. Levy and E. P. Boas, New York.—p. 301.
Protective Action of Vitamin C Against Experimental Hepatic Damage. K. H. Beyer, Madison, Wis.—p. 315.
The Heart in Pulmonary Embolism. J. Currens and A. R. Barnes, Rochester, Minn.—p. 325.
Clinical Effectiveness and Safety of New Synthetic Analgesic Drug, Demerol. R. C. Batterman, New York.—p. 345.
Effective Renal Blood Flow, Glomerular Filtration Rate and Tubular Excretory Mass in Arterial Hypertension: II. Effect of Supradiaphragmatic Splanchnicetomy with Lower Dorsal Symphathetic Ganglionectomy. P. P. Foa, W. W. Woods, M. M. Peet and Naomi L. Foa, Ann Arbor, Mich.—p. 357.
Association of Hydrothorax with Ovarian Fibroma (Meigs's Syndrome). W. W. Herrick, T. L. Tyson and B. P. Watson, New York.—p. 370.
Incidence and Causes of Hyperproteinemia: Study of 4,390 Cases. L. Cardon and D. H. Atlas, assisted by M. J. Brunner, E. Aron and S. L. Teitelman, Chicago.—p. 377.
Blood Flow in Extremities Affected by Anterior Poliomyelitis. D. I. Abramson, K. Flachs, J. Freiberg and I. A. Mirsky, Cincinnati.—p. 391.
Serum Cholesterol Level in Coronary Arteriosclerosis. A. Steiner and Beatrice Domanski, New York.—p. 397.
*Multiple Bilateral Pulmonary Adenomatosis in Man. J. L. Sims.—p. 403.
Unusual Sounds Emanating from Chest: Cause and Diagnostic Significance of Bubbling, Clicking, Crunching, Knocking and Tapping Sounds: Report of 2 Cases of Interstitial Emphysema of Lung and Mediastinum. J. A. Greene, Iowa City.—p. 410.
Value of Sodium Chloride in Prevention of Alkalosis During "Sippy" Treatment with Calcium Carbonate. J. B. Kirsner and W. L. Palmer, Chicago.—p. 415.
Diseases of Nutrition: Review of Certain Recent Contributions. H. R. Butt, R. M. Hoyne and R. M. Wilder, Rochester, Minn.—p. 422.

Multiple Bilateral Pulmonary Adenomatosis in Man.—Sims reports an instance of pulmonary adenomatosis in man which resembled the disease jagziekte of sheep. Current opinion suggests that jagziekte is an infectious disease, possibly of virus origin. A few similar cases in human beings have been reported previously. The possibility that this lesion as seen in sheep possesses neoplastic characteristics as well as transmissibility must be considered. Further investigation to establish the identity of the condition found in man with that found in sheep is indicated.

Army Medical Bulletin, Washington, D. C.

No. **65**:1-240 (Jan.) 1943

Medical and Sanitary Data on British Solomon Islands Protectorate. H. M. Horack.—p. 1.
Medical and Sanitary Data on Territory of Papua, Australian Mandated Territory of New Guinea (Including Bismarck Archipelago). H. M. Horack.—p. 18.
Medical and Sanitary Data for Levant States. T. F. Whayne.—p. 50.
Experiences of Mobile Surgical Unit in Western Desert. P. B. Ascroft.—p. 73.
*Survey of Hemolytic Streptococci in Certain Army Camps. F. F. Schwentker.—p. 94.
U. S. Army Induction Board Experience November 1940-September 1942. G. D. Williams.—p. 105.
Frostbite, Immersion Foot and Allied Conditions. I. S. Wright and E. V. Allen.—p. 136.
Neuropsychiatrists in U. S. Army: Their Function in General and in Relation to Replacement Training Centers. R. D. Halloran and M. J. Farrell.—p. 151.

Hemolytic Streptococci in Certain Army Camps.—Schwentker states that during the winter of 1941-1942 a total of 5,405 throat cultures were made at four army posts: 158 of patients, 674 of ward contacts and the others of normal carriers. The object was to obtain preepidemic data for comparison with similar studies in the event of an outbreak of streptococcic infections. At first only sporadic cases occurred, but in February an epidemic occurred in one of the posts. At this post a single type of streptococcus caused most of the cases, but at others the sporadic endemic cases were not caused by any principal streptococcus. Also the incidence of the various types of streptococci among normal carriers was similar. There was a definite relationship between the streptococcus carrier rates in a community and the incidence of scarlet fever. The logarithm of the morbidity varied directly with the carrier rate. This relationship held for the gross and group A rates and for the scarlatinal type, since the three rates roughly paralleled one another. Changes in the gross carrier rate were due to variations in the group A rate, which in turn were dependent on the changes in rate for the scarlatinal type. During ward outbreaks

of scarlet fever the scarlatinal strain of streptococcus became distributed throughout the inmates in varying degree. Depending on the degree of distribution, it failed to reach a certain proportion of the men; these remained well. Some of the others who came in contact with the scarlatinal strain were resistant to the organism, probably because of an antibacterial immunity. Regardless of their Dick reaction, they remained well and either promptly eliminated the streptococcus or became normal carriers. Those without antibacterial immunity became sick. Scarlet fever developed in the Dick positive individuals, while those who were Dick negative had streptococcic tonsillitis without a rash.

Journal of Infectious Diseases, Chicago

72:1-96 (Jan.-Feb.) 1943

Effect of Sulfanilamide on Experimental Leprosy. C. Krakower, P. Morales-Otero and J. H. Axtmayer, San Juan, Puerto Rico.—p. 1.
Effect of Oral Administration of Sulfanilylguanidine on Experimental Bacillary Dysentery in Isolated Loops of Colon of Macaca Mulatta and Its Effect When Introduced into the Loops. G. M. Dack and Dorothy Hoskins, Chicago.—p. 11.
Sylvatic Plague Studies: II. Fate of Pasteurella Pestis in Flea. J. R. Douglas and C. M. Wheeler, San Francisco.—p. 18.
Isolation and Properties of Equine Encephalomyelitis Virus (Eastern Strain). A. R. Taylor, D. G. Sharp, Dorothy Beard and J. W. Beard, Durham, N. C.—p. 31.
Relationship of Eosinophil Response to Factors Involved in Anaphylaxis. D. H. Campbell, Chicago.—p. 42.
Vi Antigen in Detection of Typhoid Carriers. M. Klein, Philadelphia.—p. 49.
Occurrence and Distribution of Salmonella Types in United States. P. R. Edwards and D. W. Bruner, Lexington, Ky.—p. 58.
Sylvatic Plague Studies: III. Epizootic of Plague Among Ground Squirrels (Citellus Beecheyi) in Kern County, California. F. C. Evans, C. M. Wheeler and J. R. Douglas, San Francisco.—p. 68.
Studies on Activity of Sodium Sulfadiazine Against Bacterium Tularense: I. Treatment of Experimental Tularemic Infection in Chick Embryo. J. C. Ransmeier, Nashville, Tenn.—p. 77.
Id.: II. Effect on Growth in Vitro. J. C. Ransmeier, Nashville, Tenn.—p. 83.
Reaction of Chick Embryo to Virulent and Nonvirulent Strains of Bacterium Tularense. J. C. Ransmeier, Nashville, Tenn.—p. 86.
Toxoplasmosis in Wild Rats. T. L. Perrin, Bethesda, Md.; G. D. Brigham and E. G. Pickens, Savannah, Ga.—p. 91.

Journal of Pediatrics, St. Louis

22:259-386 (March) 1943

Clinical Results with Use of Agglutinogen from Phase I Hemophilus Pertussis as Skin Test for Susceptibility to Whooping Cough. Harriet M. Felton and E. W. Flosdorf, Philadelphia.—p. 259.
Obstructive Emphysema and Atelectasis in Tuberculosis of Infants and Children. J. Meneghello, Santiago, Chile, and C. A. Smith, Boston.—p. 265.
Early Operation in Premature Cranial Synostosis for Prevention of Blindness and Other Sequelae: Five Case Reports with Follow-Up. H. K. Faber and E. B. Towne, San Francisco.—p. 286.
Western Equine Encephalomyelitis in Infants. H. Medovy, Winnipeg, Man., Canada.—p. 308.
*Prophylactic Use of Sulfaguanidine in Dysentery Outbreak. P. F. Lucchesi and N. Gildersleeve, Philadelphia.—p. 319.
Serum Phosphatase Values in Children Showing Retardation in Osseous Development and Low Metabolic Rates. A. M. Hill and J. E. Webber, Grand Rapids, Mich.—p. 325.
Assessing Physical Condition of Children: III. Components of Physical Status and Physical Progress and Their Evaluation. N. C. Wetzel, Cleveland.—p. 329.
Association of Gastrointestinal Allergy with Celiac Syndrome. C. F. McKhann, S. Spector and Emily R. Meserve, Ann Arbor, Mich.—p. 362.

Prophylactic Use of Sulfaguanidine in Dysentery Outbreak.—Lucchesi and Gildersleeve used sulfaguanidine prophylactically and therapeutically during an outbreak of bacillary dysentery among 118 children confined to bed with scarlet fever. The children in one part of the hospital were in danger of developing dysentery superimposed on the scarlet fever. For this reason, of the 45 children in this half of the building 30, being from cubicles in which a case of dysentery had developed, were given a prophylactic course of sulfaguanidine 0.05 Gm. per kilogram of body weight every four hours for one day and then every eight hours for two days. Dysentery did not develop in any of the 45; 1 patient had a slight fever with four stools two days after the institution of sulfaguanidine but mucus, blood or dysentery organisms were not seen. The other wing of the ward was considered protected by its segregation from the infected wing and these patients were not given a prophylactic course of the drug: dysentery did develop during the succeeding five days in 4. These patients were immediately treated with sulfaguanidine and no further spread occurred. A total of 29 children between 2 and 12 years of age were treated. All had fever, diarrhea and mucus in the stools and usually blood and pus as well, but the dysentery organism was isolated only from 4. The clinical diagnosis was confirmed in 25 by the demonstration of antibodies during the convalescent period. The initial dose was 0.1 Gm. per kilogram of body weight administered orally. This was followed at intervals of four hours by 0.05 Gm. per kilogram until formed stools had been present for one to two days. Two patients had a mild relapse after the drug was discontinued: relief was prompt on its readministration. Toxic reactions were negligible. Dietary treatment of all cases consisted of weak tea, ripe banana, scraped apple, fruit juices and, in a few cases, a kaolin-pectin mixture.

Journal Pharmacology & Exper. Therap., Baltimore

77:207-310 (March) 1943. **Partial Index**

Sulfapyridine Bacteriostasis of Lactobacillus Arabinosus and Its Counteraction. L. J. Teply, A. E. Axelrod and C. A. Elvehjem, Madison, Wis.—p. 207.
Relation of Molecular Configuration to Inactivation of Sympathomimetic Amines in Presence of Phenol Oxidase. K. H. Beyer, Madison, Wis.—p. 247.
*Effects of Atropine, Prostigmine, Adrenalin and Calcium on Movements of Fasting Human Stomach. W. F. Anderson and N. Morris, Glasgow, Scotland.—p. 258.
Relation of Extrinsic Nerves of Intestine to Inhibitory Action of Atropine and Scopolamine on Intestinal Motility. W. B. Youmans, A. L. Karstens and K. W. Aumann, Portland, Ore.—p. 266.
Effect of Cocaine on Excretion of Phenol. Clara Torda, New York.—p. 274.
*Sulfapyrazine: Its Activity Against Experimental Infections with Beta Hemolytic Streptococci as Compared with That of Sulfadiazine, Sulfathiazole, Sulfapyridine and Sulfanilamide. L. H. Schmidt and Clara L. Sesler, Cincinnati.—p. 277.
Effect of Narcotics on Balance Between Central and Chemoreceptor Control of Respiration. R. D. Dripps and P. R. Dumke, Philadelphia.—p. 290.

Movements of Human Stomach.—Anderson and Morris observed the action of various drugs on the motility of the fasting human stomach. Atropine in small doses had a parasympathomimetic action which increased the frequency and amplitude of the hunger contractions and slowed the pulse rate. Such a dose also had a sensitizing effect whereby an antiparasympathetic action was obtained from a second small dose. Large doses inhibited the movements of the stomach and quickened the heart rate. Prostigmine had an excitor effect on gastric motility. Premedication with atropine did not change this action. If given in large doses, the atropine may prevent the stimulating effect of the prostigmine. The effects of atropine were not altered by the previous administration of prostigmine. Epinephrine in small doses occasionally increased gastric motility. Large doses had a sedative action. Calcium had a sedative action on the fasting contractions of the stomach and slowed the pulse rate.

Activity of Sulfapyrazine.—The activity of sulfapyrazine against infections with beta hemolytic streptococci was compared by Schmidt and Sesler with that of sulfadiazine, sulfathiazole, sulfapyridine and sulfanilamide. Sulfapyrazine was usually considerably more effective. The data suggest that the superior activity of sulfapyrazine, and also of sulfadiazine, over equal doses of other sulfonamides is due to the absorption and excretion characteristics of the two drugs, which permit the maintenance of effective concentrations in the blood between treatments. The activity of all five drugs was essentially the same when the average concentrations in the blood were the same.

Michigan State Medical Society Journal, Lansing

42:161-240 (March) 1943

Pyogenic Infections of Skin, Especially Hydradenitis Suppurativa. L. A. Brunsting, Rochester, Minn.—p. 185.
Modern Management of Infections in Urinary Tract. R. D. Herrold, Chicago.—p. 190.
Hyperparathyroidism with Osteitis Fibrosa Cystica: Report of Case. H. M. André, E. W. Schnoor, Grand Rapids, and A. V. Solkema, Grandville.—p. 195.
Diagnosis and Treatment of Abdominal Injuries. W. D. Gatch, Indianapolis.—p. 198.
Kenny Treatment of Poliomyelitis. Elizabeth Kenny, Brisbane, Australia.—p. 204.

Minnesota Medicine, St. Paul

26:225-320 (March) 1943

Diagnosis of Corneal Lesion. F. H. Haessler, Milwaukee.—p. 243.
Eustachian Tube Function and Deafness. J. R. Lindsay, Chicago.—p. 250.
Acute Suppurative Otitis Media—A Reconsideration. C. E. Connor, St. Paul.—p. 257.
Staphylococcic Conjunctivitis. T. R. Fritsche, New Ulm.—p. 263.
Visual Malingering. A. G. Athens, Duluth.—p. 266.
Spontaneous Paralysis of Seventh and Eighth Nerves, with Recovery. O. B. Patch, Duluth.—p. 270.
Loss of Cilia in Respiratory Tract and Its Relation to Death from Respiratory Disease: Preliminary Report. A. C. Hilding, Duluth.—p. 272.
*Beneficial Effect of Urea in Topical Sulfonamide Therapy: I. Treatment of Infected Dermatoses: II. Effectiveness of Urea-Sulfonamide Combinations in Sulfonamide Resistant Infections. E. A. Strakosch and W. G. Clark, Minneapolis.—p. 276.
Treatment of Craniocerebral Injuries in Modern Warfare. G. S. Baker and A. W. Adson, Rochester.—p. 282.

Effect of Urea in Topical Sulfonamide Therapy.—Strakosch and Clark demonstrated that low concentrations of urea exert a synergistic action with sulfonamides on Escherichia coli in a synthetic medium and also neutralize the sulfonamide inhibitory action of methionine and para-aminobenzoic acid. Urea offers advantages over certain other substances, such as azochloramid, which neutralize the sulfonamide inhibitor action and enhance the bacteriostatic action. Twenty-eight instances of bilateral dermatosis due to staphylococci and/or streptococci were treated with a urea-sulfathiazole mixture. Each acted as its own control; one side was treated with a urea-sulfathiazole mixture and the other with a 5 per cent sulfathiazole ointment or solution alone. Treatment was applied in the form of an ointment consisting of 5 per cent of sulfathiazole and 30 per cent of urea in a base of fatty esters of diethanolamine mixed with petrolatum, in the form of wet packs of a solution consisting of two parts of water in which was suspended a powder mixture of 70 per cent of urea, 20 per cent of lactose and 10 per cent of sulfathiazole or in the form of a mixture of urea and sulfathiazole in powder form. The condition of only 5 of the 28 patients was not definitely benefited by the urea-sulfathiazole mixtures as compared with the sulfathiazole alone. In 1 of the 5 the condition was borderline, treatment in 1 was discontinued because of the caustic action of the sodium salt of sulfathiazole and in 3 the causative organisms may have varied in their response to urea-sulfonamide therapy under the presenting clinical conditions. In 2 cases of widespread pyodermia with organisms which were coagulase positive and hemolytic Staphylococcus aureus, both of which were decidedly sulfonamide fast by in vitro tests, topical treatment with urea-sulfonamide combinations proved effective after sulfonamides alone were ineffective. Strong urea therapy should be discontinued when fresh, uninfected granulation tissue appears, as animal experiments on cutaneous defects and some clinical experience show strong urea to be inflammatory. New granulation tissue, contiguous with infected areas, may be protected from continued urea treatment with ointment.

Missouri State Medical Assn. Journal, St. Louis

40:61-94 (March) 1943

Protecting the Newly Born Infant from Tuberculosis. P. J. White, St. Louis.—p. 61.
*Pathogenesis of Jaundice of Newborn Infant. P. G. Danis, St. Louis.—p. 62.
Diarrheal Diseases in Newborn Infant. M. M. Cook, St. Louis.—p. 64.

Pathogenesis of Jaundice in Infancy.—Danis points out that jaundice of the newborn infant may be caused by infections. A test for syphilis is indicated on every mother of a baby with jaundice. When the jaundiced baby has a fever, a blood culture always should be taken. Septic jaundice and syphilitic jaundice are associated with acute hepatitis, but today these cases are rare, as aseptic deliveries are done on thoroughly examined expectant mothers. It is the baby of a woman with streptococcic nasopharyngitis in whom sepsis develops. Fever or jaundice of the newborn infant indicates the need for a blood culture. Obstructive jaundice of the newborn comes on slowly after the first five days of life. It presents much the same picture as that produced by tumor or stone in the adult. It develops slowly in the newborn period with relatively few symptoms associated with it during the first week. After a rather protracted course death is inevitable, as rarely are any of the ducts patent. Sometimes the ducts from the liver to the gallbladder are open and cure may be brought about by an anastomosis of the gallbladder to the duodenum or stomach. In erythroblastosis lies both the simple so-called physiologic jaundice of the newborn and the serious syndrome best known as icterus gravis (erythroblastosis fetalis). The first, occurring not earlier than the third day and not later than the fifth, is called physiologic jaundice because of its frequency and its lack of seriousness. However, its frequent presence in the weak and premature does not justify the term physiologic. Some slight hepatic insufficiency must be present. The result is an inability to handle the biliary pigment produced by the destruction of the unnecessary abundant cells in the baby's circulation. When this comes to an end the condition improves. Hemolytic jaundice occurring before the second day of life or even at birth, after sepsis and syphilis have been ruled out, strikes a more serious note, as does jaundice which continues to increase rapidly in intensity or fades only to be replaced by extreme paleness. The incidence of and mortality from fetal erythroblastosis would be reduced if more attention was given to the icterus of the newborn.

Nebraska State Medical Journal, Lincoln

28:65-100 (March) 1943

The Senile Heart. L. Stark, Norfolk.—p. 69.
Pain in Spine, Thorax, Shoulders and Arms Simulating an Anginal Syndrome. F. W. Niehaus, Omaha.—p. 72.
Factors Which Become Evident on Influencing Heart After 50 Years of Age. C. Frandsen, Omaha.—p. 75.
Blood Pressure as Seen in the Aging Individual and Its Influence on the Aging Heart. C. Q. Thompson, Omaha.—p. 78.
Factors Influencing the Aging Heart. E. M. Walsh, Omaha.—p. 81.
Present Day Treatment of New Gonorrhea in Male. R. A. Frary, Lincoln.—p. 84.

New Orleans Medical and Surgical Journal

95:401-444 (March) 1943

*Increasing Incidence and Complications of Chronic Bacillary Dysentery. D. N. Silverman and A. V. Friedrichs, New Orleans.—p. 401.
Vitamin Deficiency States in Louisiana. R. C. Lowe, New Orleans.—p. 407.
Fractures About Ankle Joint. R. H. Alldredge, New Orleans.—p. 414.
Medicolegal Relations of Nervous and Mental Disorders. C. P. May, New Orleans.—p. 423.
Use of Various Insulins in Treatment of Diabetes Mellitus. R. F. Baskett, Texarkana, Ark.—p. 428.

Chronic Bacillary Dysentery.—Silverman and Friedrichs state that in New Orleans the prevalence, virulence and incidence of complications of bacillary dysentery have increased. Strains of the original Shiga bacillus and of the Flexner type are encountered more frequently; the lactose fermenter reported ten years ago is now an unusual finding in chronic bacillary dysentery. The increase in incidence and virulence of bacillary dysentery in this and other sections of the country assumes particular significance in views of the aggregation of great numbers of men in the different camps and the various communities. The possibility of this infection spreading from a local community to camps is great. Close vigilance should be observed and if dysentery should appear the patient should be isolated and every effort made to prevent the spread of this extremely serious disease.

North Carolina Medical Journal, Winston-Salem

4:77-116 (March) 1943

Military Environment Primarily in Relation to Changes in Barometric Pressure as Applied to Clinical Medicine: I. Effects of Compression: II. Effects of Decompression. A. R. Behnke, Bethesday, Md.—p. 77.
Hormone Approach to Carcinoma of Prostate. E. P. Alyea, Durham.—p. 89.
Infectious Diseases of Heart. G. T. Harrell, Winston-Salem.—p. 95.
Chalybeate Springs Mineral Water. W. J. Senter, Atlanta, Ga.—p. 98.

FOREIGN

An asterisk (*) before a title indicates that the article is abstracted below. Single case reports and trials of new drugs are usually omitted.

British Heart Journal, London

5:1-72 (Jan.) 1943

Cardiac Syndromes Complicating Diabetes and Their Treatment. K. Shirley Smith.—p. 1.
Congenital Heart Block with Dextrocardia. D. Leys.—p. 8.
Congenital Heart Block with Atrial and Ventricular Septal Defect. A. A. F. Peel.—p. 11.
Congenital Complete Heart Block. M. Campbell.—p. 15.
Tuberculous Pericardial Effusion. S. Suzman.—p. 19.
Signs Simulating Those of Mitral Stenosis. C. Bramwell.—p. 24.
Electrocardiographic Patterns of Combined Ventricular Strain. R. Langendorf, M. Hurwitz and L. N. Katz.—p. 27.
Paroxysmal Ventricular Tachycardia. W. T. Cooke and P. D. White.—p. 33.
Partial Heart Block with Dropped Beats. M. Campbell.—p. 55.
Reference of Cardiac Pain to Phantom Left Arm. H. Cohen and H. W. Jones.—p. 67.

Lancet, London

1:225-256 (Feb. 20) 1943

Psychology of Pain. E. Guttmann and W. Mayer-Cross.—p. 225.
Innervation and Function of Thenar Muscles. W. B. Highet.—p. 227.
Food Tables: Their Scope and Limitations. E. M. Widdowson and R. A. McCance.—p. 230.
*Treatment of Chronic Empyema. P. R. Allison.—p. 232.
Blast Injury of Lungs with Curious Lesion of Cerebrum. P. B. Ascroft.—p. 234.
New Method of Administering Pentothal Sodium for Long Period. R. L. Soper.—p. 235.
Clinical Application of Electromyography. G. Weddell, B. Feinstein and R. E. Pattle.—p. 236.
Spontaneous Hemorrhages in Chronic Nephritis. G. Behr.—p. 239.

Treatment of Chronic Empyema.—The operation for chronic empyema described by Allison consists in resecting lengths of one or two ribs at the base of the empyema in order to gain access to the cavity and then stripping the thick parietal layer of fibrous tissue from the overlying intact ribs and intercostal bundles, depressing it on to the surface of the lung and holding it there by means of a pack. This obliterates one cavity and makes a second of equal volume, but the walls of the new cavity are fresh and heal quickly. Three cases are reported. The operation was devised in the belief that the chronicity of an empyema depended less on the elasticity of the lung than on changes occurring in the chest wall. It seems that something prevents the inflammatory process at the margin of the cavity from causing further adhesion of parietal and visceral layers. Whatever may be the mechanics of this healing process, it is obviously carried on mainly in the chest wall as shown by the fact that the fibrous tissue formed there is usually about three times as thick as that on the lung. It may be that the dense fibrous tissue tends to strangle its own blood supply. The operation aims at producing fresh walls to the cavity and a fresh healing edge. Where the operation is applicable it has the advantage over other methods that fewer ribs need to be resected, fewer intercostal nerves divided, there are fewer operative stages and final deformity is less.

1:257-290 (Feb. 27) 1943

*Pathologic Findings in Series of Blast Injuries. J. V. Wilson and R. E. Tunbridge.—p. 257.
Electroencephalography in Chronic Post-Traumatic Syndromes. Mollie E. Heppenstall and D. Hill.—p. 261.
Night Visual Capacity of Psychologic Cases. P. C. Livingston and B. Bolton.—p. 263.
*Slowly Acting Pituitary Preparations in Diabetes Insipidus. D. Court and S. Taylor.—p. 265.
Gangrene After Arterial Contusion. K. H. Pridie.—p. 267.
Transfusion of Filtered Liquid Serum. S. Ackroyd, G. A. Harrison and L. E. R. Picken.—p. 268.
Superficial Atresia of Vulva: Report of Two Cases. Constance M. Ottley.—p. 269.

Pathologic Aspects of Blast Injuries.—Wilson and Tunbridge describe the postmortem aspects of the organs of the thoracic and abdominal cavities of 7 adults and 5 children dying primarily as a result of blast injury. Eleven of the 12 persons died immediately and 1, an adult, died after eight hours. The principal macroscopic findings were extensive bilateral pulmonary hemorrhages in all cases, hemorrhage into the peritoneal cavity in 6 cases, hemorrhage into the mediastinum in 3 cases and rupture of an aortic semilunar valve and hemopericardium in 1 case. The lung hemorrhages extended throughout the lung substance, and the subpleural hemorrhages showed no constant distribution. The principal microscopic observations were widespread congestion of the alveolar capillaries—with red cells in the alveoli and alveolar epithelium—and occasional areas of emphysema with rupture of alveoli. There was no striking difference in the pathologic findings of the person dying eight hours after the incident and of the patients dying immediately. The observations support Zuckerman's experimental evidence that it is the traumatic effect of the percussion element of the blast wave on the body surface that causes the lesions. No evidence is submitted as to the mechanism of death.

Slowly Acting Pituitary Preparations in Diabetes Insipidus.—Court and Taylor report the clinical histories of 4 patients with diabetes insipidus. Slowly acting pituitary preparations with powerful antidiuretic properties are now available. The delaying effect has been achieved in two main ways: by emulsifying an aqueous solution of the hormone or suspending an insoluble derivative in a suitable oily medium. Preparations of both types can give excellent control. A fluid intake and output not greatly above the average follows an injection once in forty-eight or seventy-two hours. Pituitary emulsion however has some serious disadvantages; the standard dose contains as much as 20 oxytocic units; as the emulsion is solid at room temperature and the hormone thermolabile, preparation of the injection requires considerable care; paraffinomas may develop at the site of injection, probably caused by the hydrocarbons present in beeswax. This unfortunate sequel deserves to be noted, since a similar vehicle has recently been used for epinephrine. Pitressin tannate in oil is free from these drawbacks; 1 cc. contains only 5 pressor units; administration is simple and painless, and after six months' careful observation no local deposits have been seen. There is no rise in blood pressure during the ninety minutes after injection or at subsequent periods. Pallor, intestinal cramps, nausea or vomiting commonly associated with injections of the liquid extract have not been observed. Pitressin tannate in oil seems to be the safest and most effective slowly acting preparation of the posterior pituitary lobe so far available for the treatment of diabetes insipidus.

1:291-324 (March 6) 1943

Unrecognized Congenital Syphilis. D. Nabarro.—p. 291.
Psittacosis (Ornithosis) Virus in English Pigeons. C. H. Andrewes and K. C. Mills.—p. 292.
*Analgesic Value of Pethidine by Mouth. R. V. Christie.—p. 294.
*Effect of Pethidine on Pain in Neurologic Cases. G. FitzGerald and B. McArdle.—p. 296.
Fat Embolism After Compound Fracture of Tibia. R. G. Henderson.—p. 297.
Restoration of Function in Burnt Hand. D. C. Bodenham.—p. 298.
*Treatment of Lymphogranuloma Inguinale with Anthiomaline. W. A. Law.—p. 300.
Gynecomastia. J. S. Richardson.—p. 304.
Cerebral Cortical Lesion and Fits in Wernicke's Encephalopathy. A. W. Gill and A. J. McCall.—p. 305.
Tracheobronchial Cyst. Pauline C. Marshall and H. A. Cookson.—p. 305.

Analgesic Value of Demerol by Mouth.—Demerol (hydrochloride of the ethyl ester of 1-methyl-4-phenyl-piperidine-4-carboxylic acid), according to Christie, may be given by mouth, rectum or intravenous, intramuscular or subcutaneous routes. Its effect when given by mouth appears in fifteen to twenty minutes and lasts five to six hours. A clinical trial of the drug was organized by the war wounds committee of the Medical Research Council. The effects of Demerol given by mouth in doses of 100, 50 and 25 mg. have been observed in eight hospitals on 335 patients suffering pain. Complete or partial relief from oral administration was obtained in 236. Complete relief was obtained in 55 per cent of patients suffering severe pain and partial relief in 20 per cent, while of those with "moderate" pain, complete relief was obtained in 61 per cent and partial relief in 12 per cent. The effect of the drug was compared with that of codeine in 109 cases. In 46 per cent of these it was clearly superior to a mixture of acetylsalicylic acid, acetophenetidin and codeine, in 21 per cent equal in effect and in 33 per cent inferior. In 13 cases it proved less effective than morphine by mouth. Toxic symptoms from oral

administration were uncommon and never serious. There was no evidence that tolerance to the drug might develop, but a slight danger of addiction has been reported. Demerol given by injection in a few cases seemed to be more effective than by mouth.

Effect of Demerol on Pain in Neurologic Cases.—According to FitzGerald and McArdle, Demerol became available in Britain under the name of pethidine in 1941. They gave it to 12 subjects selected as having severe pain arising from diverse neurologic conditions. Some had pain of peripheral origin such as radial neuritis, brachial neuritis, supraorbital neuralgia, trigeminal neuralgia or sciatica; others had pain of central origin, as in thalamic syndrome, painful phantom limb or tabetic crisis; and still others had undergone operations for injection of the gasserian ganglion or had a headache from lumbar puncture or encephalography. To some patients the drug was given intravenously, to others subcutaneously. The response to Demerol was excellent in 8 of the 12 cases; in 3 the relief was considerable although the pain was not entirely abolished and the duration of relief was not beyond four hours. The only patient who did not obtain any appreciable relief was a highly emotional subject who had been accustomed to considerable amounts of opium and rather resented being given a different drug. Adverse side effects—which ranged from transient giddiness to pallor, faintness, sweating, blurring of vision, nausea, tremulousness and anxiety—were noted in 7 of the 10 cases in which Demerol was employed intravenously. Though objectionable, these features were transitory in all but 2. It has been possible to compare the relief gained with Demerol with that following morphine in 7 cases. Morphine gave considerable relief, but it was less definite and of a shorter duration than that following Demerol.

Anthiomaline in Venereal Lymphogranuloma.—Law reports that 220 cases of venereal lymphogranuloma were treated during eighteen months among both British and African troops in West Africa. The lesions, with three exceptions, were genital and inguinal in situation and were less extensive than in the female. Cases of rectal involvement with stricture formation were not seen. The primary lesion is small, painless and transitory and is often overlooked; it may accompany other venereal infections. The value of the Frei test in diagnosis was confirmed. In some cases there was spontaneous resolution of the buboes. "Anthiomaline" (lithium antimony thiomalate), an organic compound containing 16 per cent of antimony, was administered intramuscularly or intravenously. Injections were made two or three times weekly, beginning with 0.5 cc. and increasing by 0.5 cc. up to 2 cc. for a maximum of twenty injections, which should be equivalent to 0.2 Gm. of antimony metal. When anthiomaline was not available, sodium antimony tartrate was injected intravenously as a freshly prepared 1 per cent solution in distilled water. A total of 137 cases were treated by chemotherapy. The average number of injections was ten, and the average time was a little over three weeks. It is advisable to administer eight or more injections even if the lymph node swelling has subsided on a smaller dose. Exacerbation or recurrence of the bubo may occur if treatment is discontinued too early. For comparison a series of cases was treated with sulfanilamide administered by mouth in tablet form. First stage cases responded quickly, but no more rapidly than to the antimony therapy. No real advantage could be claimed for this treatment. Some patients were subjected to lymph node excision. In the first stage such treatment was effective. To compare chemotherapy with surgical excision, 1 patient was subjected to excision from the right groin and to anthiomaline injections on the left side. Block dissection was carried out. The wound healed by first intention, but subsequently the scar became keloid in part, whereas the left inguinal glands subsided without complications.

Quarterly Journal of Medicine, Oxford

12:1-100 (Jan.) 1943

Polyps of Stomach and Polypoid Gastritis. E. I. Spriggs, with Radiography and Drawings by O. A. Marxer.—p. 1.
Pneumococcic Endocarditis. R. W. Luxton and G. S. Smith.—p. 61.
Contribution to Study of Melorheostosis: Unusual Bone Changes Associated with Tuberose Sclerosis. G. S. Hall.—p. 77.

Schweizerische medizinische Wochenschrift, Basel

72:1089-1112 (Oct. 3) 1942

Pathogenesis of Neurasthenic Syndromes. Dr. R. Brun.—p. 1089.
Sugar Metabolism and Diabetes. S. Markees.—p. 1095.
*Cardiac Damage Caused by Pneumonia. O. Spühler.—p. 1099.
Dermatostomatitis (Baader) or Erosive Pluriorificial Ectodermosis in Childhood. H. Storck.—p. 1102.
Hypochromic Anemia After Resection of Stomach. G. Hemmeler.—p. 1105.

Heart Lesions in Pneumonia.—Spühler studied cardiac lesions in cases of pneumonia. He describes 6 selected cases. Case 1 is characteristic of the course of a temporary impairment of the myocardium. Few clinical signs of cardiac impairment were present, but the electrocardiogram revealed a myocardial lesion. In case 2 pneumonia was followed by a continuous, polytopic, ventricular extrasystole. It must be assumed that in such cases myocardial scars have developed and that they are the point of origin of the extrasystoles. They are residues of a mild, focal myocarditis. That pneumonia may result in severe myocarditis is demonstrated by case 3, in which there was acute decompensation, enlarged liver, edema of the legs and beginning pulmonary edema. Pericarditis is a frequent complication of pneumonic myocardial impairment. The fourth case was one of a severe pericarditis which terminated in death. Cases 5 and 6 are examples of postpneumonic cardiac impairment. Retardation of the atrioventricular conduction and blockage in the right branch of the stimulus conducting tissue developed in 1 of these. Chronic myocarditis and endocarditis developed in the sixth case. In the majority of cases of pneumonia changes are present indicative of cardiac damage, but these are usually temporary in nature. Serious irreparable damages are possible; there may be a permanent retardation of the conduction, branch block and cardiac dilatation. Pericarditic and endocarditic involvement are sometimes observed.

Acción Médica, La Paz, Bolivia

1:1-12 (Nov.) 1942. **Partial Index**

Intrapulmonary Foreign Body Causing Repeated Hemoptysis: Removal, F. Mejia G.—p. 6.
*Pulmonary Roentgenographic Aspects of Osteoarticular Tuberculosis. P. Guillén.—p. 9.

Pulmonary Roentgenographic Aspects of Osteoarticular Tuberculosis.—Guillén studied roentgenograms of the lungs of 29 children with osteoarticular tuberculosis. The process involved the spine in 8 cases, the hip joint in 9, the knee joint in 10 and the hands and feet in 1 case each. The roentgenograms indicated that the hematogenic dissemination of the tuberculous process from the osteoarticular foci takes place during the period of secondary tuberculous invasion of the lung. The pulmonary and extrapulmonary lesions run a parallel course either toward healing or toward progression.

Anais d. Fac. d. Med. d. Univ. d. S. Paulo, São Paulo

17:357-785, 1941. **Partial Index**

Pharmacologic Effects of Vierin. A. Carvalho da Silva and S. Lessa.—p. 589.
Hemangioreticuloendothelioma. L. da Cunha Motta.—p. 627.
*Elimination of Androgens in Urine: Clinical Study. J. Lacaz de Moraes.—p. 687.
Mechanism of Healing of Tuberculous Cavitation by Collapse: New Interpretation. A. Correa Netto.—p. 775.

Elimination of Androgens in Urine.—Lacaz de Moraes made quantitative determinations of androgen elimination in the urine of 20 normal adults and in a group of patients with Cushing syndrome, adiposogenital dystrophy, hypophysial nanism, pseudohermaphroditism, hypersexuality, homosexuality and after castration. Utilizing the Zimmerman Evelyn colorimetric test he found that the amount of androgen excreted was between 11.6 and 13.7 mg. of the substance for each liter of mixed urine of normal adults, between 10.6 and 19.8 mg. in the urine of patients with Cushing disease, 1.38 mg. in adiposogenital dystrophy, 6 mg. in pseudohermaphroditism in men, 1.96 mg. in hypophysial nanism, 0.665 in the urine of castrated men, between 7.5 and 19 mg. in hypersexuality and 6.54 mg. in homosexuality.

Radiología, Buenos Aires

5:101-152 (May-June) 1942. **Partial Index**

Intrauterine X-Ray Appearances in Hysterosalpingography. C. Gazzotti and A. E. Nogues.—p. 108.
*Cranial Abnormality: Large Parietal Defects. O. F. Noguera.—p. 116.
Thrombosis of the Superior Vena Cava. A. J. Burlando and H. Reyes Oribe.—p. 119.
Roentgen Therapy of Primary and Secondary Cancer of Lung. J. L. Molinari and A. Lemos Ibáñez.—p. 125.

Large Parietal Foramens.—Noguera presents the report of a young adult who had a depression in the posterosuperior part of his head. A younger brother had the same abnormality, although the gap was very small. The rest of the family were normal. Roentgenograms of the patient's skull showed a defect in the posterior part of the cranial vault, a so-called parietal foramen. This is believed to be due to a disorder of ossification of the zones near the posterior fontanel. The abnormality is rare. As a rule it appears as two symmetrical defects in both posterosuperior regions of the cranial vault. The existence of only one large gap without an intermediate septum of ossification is still more rare. The abnormality is congenital and familial. The differential roentgenologic diagnosis of large parietal holes from Hand-Schüller-Christian syndrome, syphilis, secondary neoplasm, cleidocranial dysostosis and circumscribed osteoporosis is based on the x-ray appearances. Large parietal defects manifest themselves as either one or two large gaps in the bony substance. When there are two defects, they are divided by a bony septum. The abnormality is more pronounced in the internal table of the skull. In all other cranial diseases the bone is thinned out, in some cases to a mere film, and the defect is small. In either case the lack of bone is less noticeable in the internal than in the external table of the skull.

Revista Clínica Españo[illegible], Madrid

7:1-92 (Oct. 15) 1942. **Partial Index**

Chemical Structure and Serologic Problems of Vibrions. F. Beato y González.—p. 1.
*Starvation: Interrelations Between Edema, Plasma Protein and Diuresis. C. Jiménez Díaz, E. Roda, H. Castro Mendoza, E. Ortiz de Landázuri, L. Lorente and C. Marina.—p. 25.
Libman-Sacks Syndrome. E. B. Del Castillo, F. Martínez, F. A. De la Balze and J. Reforzo Membrives.—p. 43.
Calcium and Phosphorus Metabolism in Chronic Polyarthritis. C. Jiménez Díaz and E. Lopez Garcia.—p. 49.
Differentiation of Insular and Peripheral Diabetes. C. Blanco Soler, F. Alvarez Ude and A. Quiralte.—p. 55.
Arsphenamine Idiosyncrasy by Inhalation. M. Quero Morente and J. Gómez Orbaneja.—p. 68.
*Psychosis Observed in Treatment of Malaria by Combination of Atabrine and Plasmochin. F. Ayala and G. Bravo.—p. 70.

Starvation, Edema, Plasma Proteins and Diuresis.—Jiménez Díaz and his collaborators studied plasma proteins in their relation to the development of edema in undernourished persons. Tests were made at the time of hospitalization and during the treatment of the malnutrition. It was found that edema may exist in the presence of normal plasma proteins and fractions in the plasma, and that patients with severe hypoproteinemia and inversion of the albumin-globulin quotient may be free from edema. Thus it cannot be assumed that changes in the plasma protein level are the cause of the edema. It is evident, however, that patients with severe edema nearly always have a pronounced hypoproteinemia. Both symptoms are the result of deficient nutrition. There are, however, a number of other factors, such as emaciation, trophic disturbances in the capillary endothelium and excessive intake of fluid, which may play a part in the causation of edema.

Psychosis During Treatment of Malaria with a Combination of Atabrine and Plasmochin.—Ayala and Bravo point out that the combination of atabrine and plasmochin in one preparation represents a simplified treatment of malaria. These two synthetic antimalarials appear to be strictly parasitotropic, but now that they have been used on a large scale it appears that they have a moderate affinity for certain organs. The study of this fact is of great importance in ascertaining possible contraindications to their combined administration. The author reports 4 cases in which a psychosis developed following the administration of the two substances. The drug apparently has an elective tropism for the affective sphere. In the cases described the influence on the affectivity conduced to hyperthymia. The author observed minor degrees of affective alteration in other patients treated with the combination of atabrine and plasmochin. The psychosis is probably not caused by the malaria itself. The atabrine factor may be responsible, since it is known that atabrine exerts a direct toxic effect on the nervous system. Two of the patients had a predisposition to psychosis. The 4 cases described were observed among approximately 1,000 cases treated with the antimalarial combination of atabrine and plasmochin. If the cases of mild psychoaffective disturbances are included, the incidence would amount to 10 in 1,000. In a region in which endemic malaria has been increasing, many patients resort to the atabrine-plasmochin compound of their own accord. On the other hand, all those who develop mental disturbances are usually referred to the doctor by their alarmed families. The incidence of the psychosis is probably not more than 2 or 3 in 1,000.

Lekarz Wojskowy, Edinburgh

34:69-190 (Feb.-March-April) 1942

Organization of Field Surgery in Modern War. B. Hejduk.—p. 70.
Traumatic Shock. A. Jurasz.—p. 80.
Principles of Physical Diagnosis of Latent and Preclinical Pulmonary Lesions. J. Skládal.—p. 87.
*Pathogenesis of True Uremia. A. Fidler.—p. 92.

Pathogenesis of True Uremia.—Fidler points out that study at the University of Warsaw on the urinary excretion of nitrogen of well and uremic subjects, respectively, after feeding was approximately 63 and 73 per cent; thus in uremia its excretion is not diminished but rather increased. Further study revealed that the proteins of the serum in true uremia were physicochemically altered, making them more liable to breakdown. It appears that uremia is a disease of impaired protein metabolism and not of renal dysfunction. The changes in the serum protein might account for the rise in nonprotein nitrogen and the fall in the total protein in the blood. Study of the protein in the blood in chronic diseases of the kidney established (1) increased protein acidity, (2) a sudden accelerated diffusion of crude iron, (3) a change in clotting and (4) a change in the particle size of protein. The second and third of these changes serve as proof that protein is greatly inclined to split.

Klinicheskaya Meditsina, Moscow

20:1-96 (Nos. 1-2) 1942. **Partial Index**

Pathogenesis, Clinical Aspects and Therapy of Gangrene and Abscess of Lungs. V. D. Vyshegorodtseva.—p. 10.
*Massive Transfusion of Blood in Acute Hemorrhages from Gunshot Wounds. A. V. Kaplan and L. A. Khanin.—p. 31.
Osteosclerosis and Leukemia. A. V. Rusakov.—p. 32.
Changes in Retinal Arterial Pressure in Acute Brain Trauma. L. V. Zenkina.—p. 63.

Massive Blood Transfusion for Acute Hemorrhage from Gunshot Wounds.—Kaplan and Khanin emphasize the value of blood transfusion in war, in view of the fact that in past wars the majority of the wounded have died from hemorrhage rather than as a direct result of their injuries. In the Russian army blood transfusion has been extensively applied. While the usual dose recommended for a single transfusion is from 500 to 1,000 cc. of blood, the authors have found this amount insufficient in many cases and have been obliged to increase it to 2,000 to 5,000 cc. Measures for arrest of the hemorrhage were applied simultaneously with blood transfusion in all cases. Gunshot wounds of the femoral vessels associated with profuse hemorrhage were especially favorably influenced by massive transfusions of preserved blood. In acute hemorrhage the blood loss is so rapid that compensating factors usually maintaining blood pressure close to normal levels have no chance to function. As a result, the rapid fall in blood pressure decreases vascular tone and impairs cardiac and respiratory functions. Large amounts of blood are required for transfusion in order not only to replace the lost blood and restore the oxidation processes of the organism but also to raise the blood pressure. Drip transfusion is ineffective in most cases of acute hemorrhage. Likewise artificial solutions are inadequate, since they cannot replace blood in its functional capacity.

Book Notices

War Injuries of the Chest. Edited by H. Morriston Davies and Robert Coope. Cloth. Price, $2. Pp. 131, with 36 illustrations. Baltimore: William Wood & Company, 1942.

The nine contributors to this small volume are members of a chest surgical unit in Britain. In chapter 1 are discussed anatomic and physiologic features necessary for clinical work on the chest. Chapter 3, though short, is exceedingly appropriate, since it discusses general considerations, encouraging the physician to survey the injury analytically, so that proper evaluation of the injury and therapy may be attained as rapidly as possible.

A serious error is found on page 41, where the authors advise warming a patient in shock with "blankets, hot water bottles and a shock cradle." For the past year or two the profession has realized the danger of heat in shock. However, it is gratifying to note that oxygen therapy is strongly advocated.

The need for immediate treatment of patients with sucking wounds, tension pneumothorax, hemorrhage and "stove-in" chest is adequately emphasized. The fact that a patient can easily bleed to death in his pleural cavity is likewise properly emphasized, and the method of treatment in such injuries is carefully and adequately described. Although all chest surgeons would agree to the advisability of removal of blood from the pleural cavity after twenty-four hours, the danger of infection might be somewhat exaggerated over the impression usually held.

The danger of mediastinal emphysema with methods of relief are adequately discussed. The methods for taking care of the various types of wounds are likewise well discussed. The chapter on anesthesia is adequate, describing the various anesthetic agents and giving their advantages and disadvantages. The authors correctly warn against nitrous oxide because of the small percentage of oxygen possible during anesthesia. The danger of cyclopropane producing cardiac arrhythmia if opium derivatives are used in premedication is likewise described. The last chapter, on after-care, is appropriate but somewhat short. The entire volume is well written and contains much valuable material, indicating that the contributors are experienced in their fields.

A Symposium on Respiratory Enzymes. Addresses Given at an Institute Held at the University of Wisconsin, September 11-17, 1941. Cloth. Price, $3. Pp. 281, with illustrations. Madison: University of Wisconsin Press, 1942.

This volume of twenty-nine papers covers the activities of the well attended and organized symposium on respiratory enzymes held at the University of Wisconsin in the summer of 1941. In his address of welcome President C. A. Dykstra gave evidence of a genuine interest in the problems and results of science and called attention to the international character of the contributors in this period of bitterest nationalism. The introductory lecture by Otto Meyerhof on intermediate carbohydrate metabolism presents the modern quantitative problems in a clear and masterly way. A lucid, frank and critical treatment on oxidative mechanisms in animal tissues by Eric G. Ball is followed by a group of papers on the mechanism of hydrogen transport by K. A. C. Elliott, E. G. Ball and Fritz Lipmann, Kurt Stern and Erwin Haas and Elmer Stotz. Lipmann also discusses the "Pasteur effect," its inhibition and significance. Kurt Stern gives an inclusive and systematic treatment of oxidases, peroxidases and catalase. The chemistry and structure of nicotinamide nucleotide enzymes is well presented by Fritz Schlenk. T. R. Hogness treats the physical chemistry of the flavoproteins and the mechanism of action and characteristics of cytochrome C reductase. The chemistry of the cytochrome components and the physical chemistry, biologic action or function thereof is given by Elmer Stotz. The role of phosphoric acid is discussed from the point of view of phosphorylation of carbohydrates by Carl F. Cori, and other aspects are treated briefly by H. M. Kalchor, Otto Meyerhof, M. J. Johnson and Fritz Lipmann.

E. A. Evans covers the general subject of metabolic cycles and decarboxylation in a detailed quantitative treatment. Philip P. Cohen presents a systematic treatment of transamination and adds much from unpublished studies by him and his colleagues. Tumor respiration characteristics are discussed by K. A. C. Elliott; the question of phosphorylation in tumor metabolism by Van R. Potter; glycolysis in malignant liver tumors as compared with homologous adult or growing liver tissues by Dean Burk, and the correlation of the carcinogenicity of azo dyes to the effects of certain diamines on enzyme systems by C. J. Kensler. Bacterial respiration is reviewed by H. G. Wood and R. H. Burris from the point of view of the use of isotopes in experiments, by C. H. Werkman, E. S. Guzman Barron and P. W. Wilson on mechanisms for the complete oxidation of carbohydrates in aerobic bacteria and by F. F. Nord and P. W. Wilson on the comparison of the reactions in cell free enzyme systems with those in the intact cells. The symposium is closed by a series of brief discussions on animal tissue respiration under the chairmanship of C. A. Elvehjem. Ephraim Shorr, K. A. C. Elliott and Van R. Potter and Frederick Bernheim briefly discuss various aspects of the technics used in studying tissue respiration; A. E. Axelrod presents a note on the action of calcium on the succinoxidase activity; E. S. Guzman Barron outlines pathways of carbohydrate metabolism, and Fredrick J. Stare raises the question of the role of citric acid in the citric acid cycle in muscle respiration. The book is well printed and contains thirteen interesting photographs of participants, taken during the meetings. It is an excellent and timely contribution to this difficult phase of biochemistry.

Annual Report of the Gorgas Memorial Laboratory, 1942. Letter from the President, Gorgas Memorial Institute of Tropical and Preventive Medicine, Inc., Transmitting the Fifteenth Annual Report of the Gorgas Memorial Laboratory Covering the Fiscal Year 1942. 78th Congress, 1st Session, House Document No. 31. Paper. Pp. 24. Washington, D. C.: Government Printing Office, 1943.

A report of the physical and financial features of the institute with a summary of the more important scientific activities. Of special interest is the attempt to control malaria by monthly blood examinations and treatment for twelve consecutive years. It has been found that morbidity can be reduced materially, but there has been little effect on transmission. This is probably the most conclusive investigation ever attempted along this line. The widespread distribution of Trypanosoma hippicum in horses of Panama has been shown. It is very fatal to horses and mules, but cattle suffer no effects although they harbor the organism. Vampire bats spread the infection and eventually succumb to its effects. The trypanosome infection in cattle caused by Trypanosoma vivax is a very serious disease and the probable vector was found to be the horn fly Lyperosia irritans. Investigations on the relationship of aquatic vegetation to the breeding of anopheline mosquitoes along the trans-Isthmian highway are under way. Mr. W. H. W. Komp has continued the intensive study on the anophelines of the Caribbean area and the first monograph has appeared. Important taxonomic studies on the Tabanidae are included. Intensive trials on insect repellants have been instituted. The results of immunologic investigations for improved diagnostic methods in malaria are given. For any one interested in tropical and parasitic diseases this annual report is extremely valuable, as it includes the results of investigation on numerous subjects from one of the most active outposts in this field.

Orthopedic Conditions at Birth: Nursing Responsibilities. By Jessie L. Stevenson, R.N., Consultant in Orthopedic Nursing, National Organization for Public Health Nursing, New York. Paper. Gratis. Pp. 80. New York: Joint Orthopedic Nursing Advisory Service of the National Organization for Public Health Nursing and the National League of Nursing Education, 1943.

This neatly printed pamphlet is one of a series being prepared and distributed by the Joint Orthopedic Nursing Advisory Service. No one else is better qualified to discuss this subject than is the author, Jessie L. Stevenson. This handbook was prepared for the purpose of assisting nurses in the early recognition of orthopedic conditions which can be present at birth and in the care of patients with these disabilities. The subjects covered include brachial birth palsy, cerebral palsy, congenital deformities of the extremities, torticollis and spina bifida. The material is well written and should be easily understood. Every general duty nurse who may be called on to care for an orthopedic patient should either know, or have readily available, information such as is offered in this small pamphlet.

Vascular Spasm: Experimental Studies. By Alexander John Nedzel, M.D., M.S., Associate Professor of Pathology, University of Illinois College of Medicine. Contribution from the Department of Pathology, Bacteriology and Public Health in the College of Medicine. Illinois Medical and Dental Monographs, Vol. III, Nos. 3-4. Cloth. Price, $2.75. Paper. Price, $2.25. Pp. 151, with 161 illustrations. Urbana: University of Illinois Press, 1943.

In this valuable study, published in the monograph series of the University of Illinois, Nedzel presents the histopathologic background of stasis anoxia. The work provides a firm link between form and function and dysfunction; between the environmental impact of varied origin and the equally varied clinical symptomatology that may ultimately reflect the original disturbance.

The thesis that Nedzel has sought to establish finds its first clearcut statement in the hippocratic literature in the following terse sentences: "So in one place the blood stops, in another it passes sluggishly, in another more quickly. The progress of blood through the body proving irregular, all kinds of irregularities occur."

In our era Pawlinoff was apparently the first to recognize the role of stasis anoxia in inflammation, though one fails to find reference to his work in Nedzel's monograph.

Nedzel's studies, which primarily are concerned with a histopathologic demonstration, are really holistic in character, for he has approached the problem both from the physiologic and clinical side as well as from the morphologic. He first discusses the significance of localized vascular spasm, then the more generalized shift in the blood mass that occurs between the splanchnic and peripheral beds associated with sympathicotonia; the latter is illustrated by a series of original observations of temperature changes in various organs under varying conditions.

To simulate the exaggeration of organic rhythm which may find expression in the state of the vascular apparatus in both experimental and clinical conditions which, by individual predilection, may be labeled sympathicotonia vs. vagotonia, or a relative alkalosis vs. a relative acidosis, or an adrenal vs. a thyroid preponderance, Nedzel has made use of single or repeated injections of pitressin and at varying time periods after such injections has excised the tissues and examined the microscopic picture.

The material selected for presentation in the monograph includes the endocardium, the stomach, the liver and kidneys and the central nervous system. While focused primarily on endocarditis, ulcer of the stomach, nephritis and multiple sclerosis, the implications cover a wider latitude.

Nedzel first demonstrates that pressor episodes definitely change the endothelial cells at the impact surfaces of the endocardium. These reveal the characteristic histologic changes that are associated with stimulation, fatigue and necrobiosis; they become adhesive for fibrin, platelets and bacteria. With this as a background he demonstrates the mechanism of endocardial localization of bacteria as well as the processes of repair, i. e. the mechanisms underlying endocarditis. He then demonstrates the sequence when, with spasm, the surface of the stomach becomes unduly anoxic (particularly significant under conditions in which there is greater functional demand on the mucosal surface) and patches of necrosis occur. These, if coalescing or with repeated spasm or subject to gastric digestion, provide the background for ulcer formation. At necropsy such alterations are rather common, though often overlooked or disregarded. Because of the interrelation of kidney and liver damage with eclampsia, a flagrant disturbance of vascularization associated with undue spasm, Nedzel presents a brief but suggestive chapter illustrating changes that occur in these organs after pitressin injections. It is a field that should be extended. The final two chapters deal with alterations of the central nervous system and, while oriented about multiple sclerosis and the significance of change in vascular tone for bacterial localization in the central nervous system, the observations are of genuine importance for the neuropathologist.

For many years vascular dysfunction has been considered of significance for the symptom complex which we term multiple sclerosis. Putnam has already called attention to the thrombosis of the small blood vessels that can be observed. Nedzel's observations support the thesis that changes in the specific cells, with later alterations in the supporting components, follow in the wake of vascular change.

The title of the monograph must not obscure the recognition of the associated phase of undue dilatation of the vascular bed that follows vascular spasm. Spasm as well as the subsequent reaction of the tissue (stimulation, fatigue of the endothelium and so on) are associated with regional anoxia. The vasodilatation, while physiologically a mechanism of reequilibration, may actually augment the disturbance of the oxidative balance, particularly when associated with thrombosis.

Nedzel's studies contribute much to an understanding of the underlying mechanisms of disease, not only of the clinically acute forms, but of the so-called wear and tear diseases, when the insidious breakdown of vascular supply and tissue demand is followed by erosion of the parenchyma and the overgrowth of connective tissue cells. It is in this domain that knowledge of repetitive insults by weather and emotion, undue stimulation and fatigue, minor trauma and infection—all of which are of the kind simulated in Nedzel's experiment—becomes of great importance and Nedzel's studies are of particular value here. The text is concise, the illustrations are well selected and unusually good. An adequate bibliography is appended, but an index has not been provided. The contribution is one of the most valuable of the interesting series published by the University of Illinois, not only for the pathologist, but for the physician interested in the mechanism of the organic breakdown.

Creatine and Creatinine Metabolism. By Howard H. Beard, Ph.D., Professor and Director of the Department of Biochemistry, School of Medicine, Louisiana State University, New Orleans. Cloth. Price, $4. Pp. 376. Brooklyn: Chemical Publishing Company, Inc., 1943.

This book presents a survey of the progress made in the field of creatine and creatinine metabolism during the last fifteen years, since the publication of Hunter's classic monograph on this subject. The author includes, where possible, applications of experimental studies to human metabolism and to certain diseases of man. Detailed instructions are given for the determination of creatine and creatinine in body tissues and fluids by standard procedures, and the newer specific enzymatic methods are briefly discussed.

The question of the precursors of creatine and creatinine in the organism is discussed in detail, the author defending at length his theory that creatine is formed primarily from aminoacetic acid and urea, with subsequent methylation, rather than from aminoacetic acid and arginine as is generally believed by other investigators. The author's finding of an apparent stimulation of creatine formation and creatinine excretion by a large number of widely dissimilar substances is puzzling. Especially is this true in the case of his studies on the methylation of glycocyamine to form creatine, the results indicating that such diverse substances as methyl alcohol, methyl amine and methyl purines can serve as methyl donators. The changes observed in creatine-creatinine metabolism following the administration of various vitamins and hormones are likewise difficult to understand.

Some of the suggested applications of experimental studies to the treatment of certain human diseases appear unwarranted because of a lack of sufficient undisputed supporting evidence. For example, the preponderance of evidence today indicates that, in contrast to the observations of the author, aminoacetic acid and gelatin have no consistent value in increasing muscular work output in human subjects. Likewise the suggestions that aminoacetic acid is beneficial in the treatment of certain myopathies, heart diseases, allergy, toxemias of pregnancy and diseases of the eye appear at least premature in view of a lack of sufficient experimental evidence.

The most startling portion of the book is the final chapter dealing with the relation of amino acids, amines and guanidine bases to tumor growth and regression. From studies on rats with transplanted sarcomas the author has graded the known amino acids (except tyrosine) with respect to their abilities "to stop the growth of tumors or to cause their disappearance." The author concludes (p. 309) that "creatine and its derivatives or precursors in the body, as well as creatinine in one instance, will cause tumors to disappear."

This book will be found of value chiefly for its extensive bibliography on creatine-creatinine metabolism and for bringing to attention many new and puzzling claims for these two important substances and their alleged precursors.

Queries and Minor Notes

THE ANSWERS HERE PUBLISHED HAVE BEEN PREPARED BY COMPETENT AUTHORITIES. THEY DO NOT, HOWEVER, REPRESENT THE OPINIONS OF ANY OFFICIAL BODIES UNLESS SPECIFICALLY STATED IN THE REPLY. ANONYMOUS COMMUNICATIONS AND QUERIES ON POSTAL CARDS WILL NOT BE NOTICED. EVERY LETTER MUST CONTAIN THE WRITER'S NAME AND ADDRESS, BUT THESE WILL BE OMITTED ON REQUEST.

TREATMENT OF TETANUS EXPOSED PATIENT PREVIOUSLY IMMUNIZED WITH TOXOID

To the Editor:—If a patient is given tetanus toxoid for active immunization, what does one do if an injury which would ordinarily require antitoxin occurs six months after the toxoid; one year after the toxoid; two years after the toxoid; three years after the toxoid; eight years after the toxoid; fifteen years after the toxoid? Does the original toxoid give lasting immunity without any further stimulating doses? If not, will semiannual or annual stimulating doses produce that effect? In short, has the use of toxoid now made it unnecessary to use the antitoxic serum?

Louis V. Blum, M.D., Baltimore.

ANSWER.—The question of whether to depend in a given case on a previous active immunization or to administer a prophylactic dose of tetanus antitoxin is a matter for surgical judgment. Certain general principles, however, can be laid down for guidance. It is now generally agreed that administration of two doses of 1 cc. each of alum precipitated toxoid from one to six months apart will produce basic immunity. After such treatment the reactivity of the person is enormously increased so that a subsequent boosting dose of toxoid given three or six months later will increase the antitoxic content of the blood from twenty to fifty times, giving an immunity of a higher degree and longer duration than that which existed before. The duration of immunity has never been definitely established. It may vary from as short a period as three months to a lifetime. A series of three doses in the course of one year will, generally speaking, give an immunity which will last two or more years. Because of the great individual variation in responses, it is always advisable in the face of definite exposure to give a still further dose of toxoid with the view to rapid stimulation of additional antibody formation. It must, however, be borne in mind that formation of antibodies consumes time. For this reason it is always good judgment in the presence of badly macerated tissues to give immediately a prophylactic dose of antitoxin serum while waiting for the effect of the boosting dose of the toxoid. To particularize, it may be stated that the original toxoid immunization should not be relied on as furnishing lasting immunity without further stimulating doses. Semiannual or annual stimulating doses, as suggested in the query, will certainly produce that effect. One certainly would resort to additional doses after eight and fifteen years. There will be occasions when it will be necessary and wise to employ the antitoxin serum in addition to the toxoid immunization.

GLASSES NOT NEEDED ON VACATION

To the Editor:—A married woman aged 32 has been wearing glasses for ten years. Last summer while vacationing in the Adirondack Mountains in New York she noticed that she was able to do without her glasses completely. However, on returning to her home in New Jersey she was unable to get along without them. I have since learned that her mother had exactly the same experience many years ago. My patient did not know this at the time. Thank you for any explanation.

Lieutenant, M. C., A. U. S.

ANSWER.—It is not uncommon to hear of patients who get along quite well without glasses when they are on vacations and not using their eyes consistently but who do require glasses when they are doing their regular work, even if this is doing housework. In the case reported the extent of the refractive error is not stated. This would have indicated how much of a handicap the woman is overcoming in going without her glasses. It is quite likely that she had a rather slight refractive error and needed glasses only under conditions of strain. Aside from the relief of this strain during a vacation, any other explanation is doubtful.

VITAMIN K AND DENTAL CARIES

To the Editor:—I have recently read a brief statement about the use of vitamin K in the prevention of dental caries. Have you any information as to indications, dosage recommended and results thus far reported?

Louise C. Gloeckner, M.D., Conshohocken, Pa.

ANSWER.—It has been found on the basis of in vitro and in vivo experiments that vitamin K will materially inhibit acid formation in the mouth. However, these studies are still in an experimental stage. The evidence on hand is insufficient to indicate the use of vitamin K as a therapeutic measure for dental caries.

THROMBOPHLEBITIS AND TRANSFUSION OF COMPATIBLE BLOOD

To the Editor:—I recently attended a white woman aged 43 who had an intrauterine leiomyoma and who had had a number of repeated and severe hemorrhages before seeing me. Her past medical history revealed that she had suffered from right heart failure about one and a half years before. After a period of time in bed and with medications she was able to live a somewhat restricted life. Some ten years previous to this she had an attack of inflammatory rheumatism after the birth of her last child. Physical examination revealed her to be a short, obese woman with a systolic murmur over the base of the heart. Blood pressure was 112/72. Laboratory examinations showed a hemoglobin of 38 per cent, with 2,700,00 red blood cells and 8,600 white blood cells. The differential count showed 66 per cent polymorphonuclears, 26 per cent lymphocytes, 2 per cent monocytes, 4 per cent eosinophils and 2 per cent basophils. The blood smear was showing a definite anisocytosis and some polychromasia. She was sent to the hospital, and because of her poor condition a transfusion was performed. She had a type 2 blood, and a donor with type 2 blood was used for the transfusion. On cross agglutination there was no reaction. There was no immediate or delayed reaction following the transfusion. Two days later a biopsy was made of the tumor without the use of anesthesia with the exception of morphine. This proved to be a benign leiomyoma. To prevent further bleeding she remained in bed with the foot of the bed elevated. She responded well and her general condition became much improved. Ten days after the transfusion she developed typical thrombophlebitis, first in one leg and then in the other. She was subsequently told by another physician that the thrombophlebitis was due to the transfusion given her from a type 2 donor. He emphasized that the thrombophlebitis was due to her receiving type 2 blood when she was of the same type. I am unable to find any verification of this statement in any available literature. I should like to know if there is any possibility of this complication arising following a transfusion given to a recipient whose blood is type 2 from a donor with the same type of blood. If this is true, what procedure should be followed in transfusing a recipient with type 2 blood?

M.D., Minnesota.

ANSWER.—It is common knowledge that thrombophlebitis is a not infrequent postoperative complication, particularly in debilitated patients with sluggish circulations. It is significant that the patient gives a history of rheumatic fever with an attack of right heart failure one and a half years before the operation and that at the time of the operation there were signs of mitral insufficiency. To attribute the thrombophlebitis to a transfusion of blood of the correct group given ten days previously is absurd. Incidentally, instead of "type 2" the designation "group A" should be used, in conformity with the practice of the armed forces, the Red Cross and all progressive hospitals.

TREATMENT OF UTERINE CANCER IN AGED

To the Editor:—A woman aged 82 has been bleeding or spotting for six months to a year. One week ago she had a severe hemorrhage. She was taken to the hospital and under cyclopropane an examination was made. The uterus was not large, the cervix was thin, and curettement for diagnosis gave the feeling of polyps, not of cancer. The pathologic diagnosis came back adenocarcinoma grade 2 of the fundus uteri. Radium was applied to the inside of the fundus and left for seventy-two hours. Since its removal the bleeding has nearly stopped. Considering the age of 82, a normal blood count, a normal urine and a well preserved person both physically and mentally, what is the best type of treatment to recommend? Should treatment be conservative or only one course be given, that of a radical nature?

M.D., Indiana.

ANSWER.—A patient of advanced age with a cancer of the body of the uterus should be treated with radiation. If radium is employed it should be inserted into the uterine cavity in sufficient amount to come in contact with the entire endometrial surface. The amount of radiation, either at one sitting or interruptedly over a period of a few weeks, is usually a total of at least 3,500 milligram hours. After several months another treatment, preferably a somewhat smaller amount, may be given with advantage.

The curettage may have been necessary to confirm the diagnosis, but curettage in such cases should be avoided whenever possible. If required, it should be performed gently and not more thoroughly than necessary to confirm the diagnosis; with curettage there is always a hazard of cancerous spill through the fallopian tubes, into the abdominal cavity, or extension through the lymphatics and venous sinuses into the broad ligaments and beyond.

High voltage roentgen therapy is a helpful adjunct to intrauterine irradiation in cases in which there is likelihood of extension of the growth beyond the confines of the uterus.

Although radiation for cancer should ordinarily be given as intensively as possible and over a relatively short period of time, with an elderly patient it is preferable to be more cautious; interrupted short applications of radium and less frequent x-radiation lessen the morbidity and decrease the hazard.

OCHRONOSIS AND ALKAPTONUREA

To the Editor:—I have under my care at the present time a white woman aged 85 in whom the diagnosis of ochronosis has been made because of (1) pigmentation of the ears and sclerotics, (2) urine that darkened considerably on exposure or addition of alkalis and (3) osteoarthritis of the knee joints and spine with the latter showing all the changes described by Pomeranz. A study of the urine revealed the presence of both homogentisic acid and melanin. She has no evidence of melanosarcoma. Have any cases ever been described with the findings of both melanin and homogentisic acid in the urine? Morgan Y. Swirsky, M.D., New York.

ANSWER.—Certainly the diagnosis of ochronosis seems justifiable in view of the evidence as listed in the question. In the article by Oppenheimer and Kline there is a tabulation of all reported cases, and 1 of these cases presented melanuria "and probably alkaptonuria." A partial bibliography relating to ochronosis:

Berry, J. L.: Exogenous Ochronosis: Clinical Report of New Case, *Lancet* **2**: 1157 (Nov. 26) 1932.

Kline, B. S.: Pathological Fndings in a Case of Ochronosis, *Proc. New York Path. Soc.* **16**: 53 (March-April) 1916.

Landois, Felix: Zur Kenntnis der Ochronose, *Virchows Arch. f. path. Anat.* **193**: 275 (Aug.) 1908.

Oppenheimer, B. S.: A Case of Ochronosis Associated with Melanuria, *M. Rec.* **89**: 844 (May 16) 1916.

Oppenheimer, B. S., and Kline, B. S.: Ochronosis, with a Study of an Additional Case, *Arch. Int. Med.* **29**: 732 (June) 1922.

Osler, William: Ochronosis: The Pigmentation of Cartilages, Sclerotics and Skin in Alkaptonuria, *Lancet* **1**: 10, 1904.

Pomeranz, M. M.; Friedman, L. J., and Tunick, I. S.: Roentgen Findings in Alkaptonuric Ochronosis, *Radiology* **37**: 295 (Sept.) 1941.

Pope, F. M.: A Case of Ochronosis with a Note on the Relationship of Alkaptonuria to Ochronosis by A. E. Garrod, *Lancet* **1**: 24, 1906.

Reid, Edgar: On Ochronosis: Report of a Case; the Clinical Features by William Osler; the Urine by A. E. Garrod, *Quart. J. Med.* **1**: 199, 1907-1908.

Seaborn, Edwin: A Case of Ochronosis, THE JOURNAL, Feb. 19, 1938, p. 576.

CYST OF POPLITEAL BURSA

To the Editor:—Oct. 7, 1940 a patient had a large painful popliteal bursa excised from the left leg. He made an uneventful recovery. Now the insurance carrier writes that he has presented himself to another physician for treatment who tells him that evidently all of the tumor was not removed in the previous operation and he should have another operation as soon as possible. I have never had any experience with a recurrence of this type of bursa and can find nothing in the literature on the subject that would give me any clue. Can you give me any information on this? M.D., Wisconsin.

ANSWER.—The pathologic nature of a cyst of the popliteal bursa is quite similar to that of an ordinary ganglion. If all of the cyst is removed, including the stalk, which is nearly always present and frequently extends down between the condyles of the femur posteriorly to the joint capsule and may be patent, communicating with the joint, recurrences are unlikely to occur.

If portions of the wall of the cyst including the lining are left behind, just as is true in the case of an incomplete excision of a ganglion, recurrences will be fairly common.

This condition was described by Baker in the reports to St. Bartholomew's Hospital in London, volume 13, page 245, and volume 21, page 177. It is sometimes called Baker's cyst.

MANUAL LABOR FOLLOWING NEPHRECTOMY

To the Editor:—Do you consider a man who has had a nephrectomy (hydronephrotic infected kidney with stone found at operation; carcinoma of ureter was preoperative diagnosis) and completely recovered therefrom able to do hard manual labor? If not, why? If so, why? A man aged 51 and such an operation. As conditions which caused the nephrectomy remain uncorrected, he is liable to further renal damage which might possibly disable him. M.D., California.

ANSWER.—A man who has had a nephrectomy for a hydronephrotic infected kidney with stone is probably able to do hard manual labor provided his urinary tract is now completely sterile, he has no evidence of stone remaining in the urinary tract and he was used to doing hard manual labor before his present sickness. There is no reason why a man with one sound kidney cannot carry on as before as far as his kidney function is concerned, as one kidney affords more than adequate function for the body needs and, as far as is known, hard work does not adversely affect its performance if the body is cared for satisfactorily in other ways by conservative living.

It is, of course, important to be sure that this patient has no infection remaining in the urine or in the lower genital tract.

SUCTION METHOD OF CATARACT EXTRACTION

To the Editor:—Could you give me information on the Dimitry suction disk for intracapsular cataract extractions? Please let me know whether you think it is an efficient instrument for intracapsular cataract extractions by the suction method. James S. Davis, M.D., Marion, Ill.

ANSWER.—The Dimitry disk is a simple and effective instrument for applying suction to the lens capsule. There are certain objections to the suction method of cataract extraction, one of which is that the incision must be quite large and is made to gape more widely during removal of the lens with any suction apparatus than with the use of forceps. However, in the intumescent stage of cataract the suction method allows intracapsular extraction where other methods fail and in such cases the Dimitry apparatus has proved of definite value. It is, in the opinion of certain ophthalmologists, equal to more elaborate instruments for the suction method.

SOYBEAN MILK AND COW AND HUMAN MILK

To the Editor:—Would you kindly tell me the comparison between soybean milk and cow's milk. Could soybean milk be used in place of cow's milk for human infants? How do the proteins, fats and carbohydrates in soybeans compare with those in human milk? I understand that in China and Japan they have no cow's milk and they use soybean milk in its place. James H. Rosecrans, M.D., Hoboken, N. J.

ANSWER.—The soybean contains 40 per cent protein, 20 per cent fat and very little carbohydrate. The protein is vegetable protein high in aminoacetic acid and is said to give as normal a growth as the animal protein casein contained in cow's milk. Soybean milk as compared to cow's milk is deficient in fats, carbohydrate, minerals and vitamins. This fault is overcome by several commercial products in which olive oil, arrowroot starch, maltose and dextrose, and salts as dicalcium phosphate, and sodium chloride are added. Such a mixture in the form of a powder when added to water is similar to cow's milk in percentage content and not like human milk. The green and yellow types of soybean have long been a preferred artificial feeding of Oriental infants. It has been used in this country for some time as a food for infants allergic to animal protein.

COCAINE-PHENOL MIXTURE FOR DRUM MEMBRANE ANALGESIA

To the Editor:—Is there danger from cocaine reaction in using cocaine, menthol and phenol in equal proportions for local ear anesthesia? I have used it in many cases and have never had trouble with it even in small children. Harold L. Snow, M.D., San Pedro, Calif.

ANSWER.—Topical application of this mixture to the drum membrane to make paracentesis less painful has been practiced for many years. A rather careful search of the literature has not discovered any reports of a "cocaine reaction" following the procedure. Absorption of drugs applied to the intact skin is minimal. Failure of this method in some cases to abolish the pain of paracentesis is evidence of this fact.

Probably phenol is the active constituent of the mixture when successful analgesia results from its application.

VACCINES AND TUBERCULOSIS

To the Editor:—In reply to a question concerning vaccines for tuberculosis which appeared in The Journal, April 24, 1943, page 1419, mention is made of the work carried out by Dr. E. A. Watson, and he is suggested as a source of BCG vaccine. Dr. Watson did some work with BCG a number of years ago, but I believe the only Canadian source of the vaccine at the present time is Dr. Armand Frappier, University of Montreal, Montreal, Quebec. Dr. Frappier learned the technic of preparing BCG from a representative of Calmette's laboratory, and his work was for some time supported financially by the National Research Council of Canada. In the last few years it has been taken over by the department of health of the province of Quebec. Dr. Frappier's vaccine has been used quite extensively in Montreal and elsewhere in the province of Quebec for the vaccination of children and in the last few years has been supplied to Dr. R. G. Ferguson, of Saskatchewan, who has vaccinated a substantial number of Indian children and hospital employees in that province. In the reply to your inquiry mention was made of a number of early articles on BCG, but there is no reference to what is perhaps the most important paper on the use of BCG in Canada. I refer to a paper by J. W. Hopkins in the *American Review of Tuberculosis* for May 1941, page 581. It gives a brief history of what is perhaps a unique experiment in the vaccination of children with BCG and includes a statistical analysis of the results obtained. I may add that in both mortality and morbidity the vaccinated children showed a favorable effect. Results since that time add weight to the tentative conclusions and it is hoped in a few years to make a further complete analysis of the results of this experiment and publish the findings.

F. E. Lathe, National Research Council, Ottawa, Ont.